



# **Final Status Survey Final Report Phase IV**

**Appendix A3  
Survey Unit Release Record  
9106-0003, Discharge Canal**

**November 2006**



CYAPCO  
FINAL STATUS SURVEY RELEASE RECORD  
DISCHARGE CANAL  
SURVEY UNIT 9106-0003

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**1. SURVEY UNIT DESCRIPTION**

Survey Unit 9106-0003 (Discharge Canal) is designated as Final Status Survey (FSS) Class 2 and consists of approximately 8,292 m<sup>2</sup> (2.05 acres) of water covered sediment in an area located approximately 0.28 miles from the reference coordinate system benchmark used at the Haddam Neck Plant (HNP) (see Attachment 1, Figure 1). The Discharge Canal is a man-made mile long waterway that runs parallel to, and ultimately communicates with the Connecticut River. The Discharge Canal is subdivided into fifteen (15) survey units which includes two (2) permanent wetland areas for FSS purposes. With "called north" oriented with the north to south flow of the Connecticut River, the survey unit is bounded as follows: Discharge Canal Survey Unit 9106-0002 is to the north, land surface area Survey Unit 9521 is to the east, Discharge Canal Survey Unit 9106-0004 is to the south and Survey Area 9520 is to the west. The survey unit comprises the canal sediments to the deeper of three (3) feet or the original construction depth. It extends up the canal banks to the mean high water level.

The reference coordinates associated with this survey unit are E010 through E015 by S084 through S092 (refer to License Termination Plan Section 5.4.4). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS) based on the Connecticut State Plane System North American Datum (NAD) 1927.

**2. CLASSIFICATION BASIS**

The survey unit was classified in accordance with Procedure RPM 5.1-10, "Survey Unit Classification." The historical information, scoping analyses and characterization results provided sufficient data to designate Survey Unit 9106-0003 as Class 2 in April 2006.

The "Classification Basis Summary" conducted for this survey unit consisted of:

- a) A review of the 10CFR50.75 (g) (1) database,
- b) A review of the "Initial Characterization Report" and the "Historic Site Assessment (HSA) Supplement,"
- c) Historic and current survey records review,
- d) Visual inspections and a "walkdown."
- e) Formal or informal interviews with cognizant personnel.

A review of the 10CFR50.75(g)(1) database report identifies a number of events that may have impacted this survey unit. Several events indicated the potential for plant related contamination in the survey unit. These included a number of primary side system to secondary side system leakage events, contamination

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found to be present in secondary side systems and components, and unmonitored spills that drained to the discharge canal. In 1986, samples were taken from the legacy dredge spoils removed in 1979 dredged spoils area and from recently dredged canal sediment. The sample analyses indicated that the concentrations of Cs-137, Co-60 and other radionuclides were a small fraction of the DCGLs for those nuclides that could be identified by gamma spectroscopy. (refer to NE-86-RA-1142 dated 11-13-86). None of the available historical information reviewed would support a conclusion that any residual activity in this survey unit was present at concentrations greater than the respective DCGLs.

Additional information was provided by several historical documents, including the "Results of Scoping Survey", (completed 9/1/98), the "Historical Site Assessment", and the HSA Supplement (dated 6-30-00). These documents presented the results of several sediment samples taken in 1997. These sample results indicated concentrations of 0.5 pCi/g for Co-60, 0.024 pCi/g for Cs-134 and 0.722 pCi/g for Cs-137.

A review of the "Initial and Supplemental Characterization Reports" as well as the previous "Classification Basis Summaries" provided no additional information pertinent to classification.

Characterization was performed by Site Closure personnel in April and May of 2004 to obtain the necessary data of sufficient data quality for final status survey (FSS) planning purposes. Fifteen (15) samples were initially obtained by biased sampling throughout the area. The samples were analyzed off-site using gamma spectroscopy. Hard-to-Detect analyses were also conducted on two (2) of the fifteen (15) samples. The only plant-related dosimetrically significant radionuclides identified in the samples were Cesium-137 and Cobalt-60 (refer to Table 1).

<b>Parameter</b>	<b>Cs-137 (pCi/g)</b>	<b>Co-60 (pCi/g)</b>
Minimum Value:	-6.28E-03	-1.47E-02
Maximum Value:	4.44E-01	1.49E+00
Mean:	9.06E-02	1.59E-01
Median:	3.30E-02	7.46E-03
Standard Deviation:	1.32E-01	3.85E-01
NOTE: The Operational DCGLs are 5.38 pCi/g for Cs-137, 2.59 pCi/g for Co-60; these are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE		

The FSS Engineer performed a visual inspection and walkdown during May 2006 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions.

Based upon the historical information and the results of radiological surveys performed during characterization, it was concluded that there was a low

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probability for residual radioactivity to be present in this survey unit in concentrations greater than the Operational DCGLs justifying a final survey unit classification of Class 2 (refer to Section 3).

**3. DATA QUALITY OBJECTIVES (DQO)**

FSS design and planning is based on the Data Quality Objective (DQO) process as described by the LTP, Procedure RPM 5.1-11, "*Preparation of Final Status Survey Plan*," and the "*Multi-Agency Radiation Survey and Site Investigation Manual*" (MARSSIM). A summary of the main features of the DQO process are provided herein.

The DQO process incorporates hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would satisfy the release criteria objective of the FSS.

The primary objective of the Final Status Survey Plan (FSSP) was to demonstrate that the level of residual radioactivity in Survey Unit 9106-0003 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of Derived Concentration Guideline Levels (DCGLs). The DCGLs represent the concentration of radioactivity above background, equivalent to a dose-based release criterion and is presented in terms of surface or mass activity concentrations. Chapter 6 of the LTP describes in detail the modeling used to develop the DCGLs for soil (called Base Case Soil DCGL), for existing groundwater radioactivity and for future groundwater radioactivity that will be contributed by building foundations and footings.

As described in detail in the LTP, the dose model applied to the discharge canal presumes that the canal sediments are dredged to a depth of three (3) feet and spread for the planting of crops per the Resident Farmer Scenario. Consequently, the soil DCGLs are directly applied to the canal sediment media which are sampled by coring to a nominal depth of three (3) feet.

The DCGLs presented in Chapter 6 of the LTP were developed for exposures from three (3) components, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing

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residual radioactivity. Equation 1 shows the mathematical relationship between the three (3) components and the total dose.

*Equation 1:*

$$H_{\text{Total}} = H_{\text{Soil (sediment)}} + H_{\text{Existing GW}} + H_{\text{Future GW}}$$

The total dose under the LTP criteria is twenty-five (25) mrem/yr TEDE from all three components. The allowable total dose under the Connecticut Department of Environmental Protection (CTDEP) radiological remediation standard for Connecticut Yankee (CY) is nineteen (19) mrem/yr TEDE. To satisfy both the LTP and CY CTDEP criteria, the dose from soil must be reduced when using the existing and future groundwater dose values discussed above.

This survey unit is affected by existing groundwater (reference CY memo ISC 06-024). The dose contribution from existing groundwater is bounded to be less than two (2) mrem/yr TEDE, based on field data.

This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no concrete foundations or footings remaining within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contributions from future groundwater, the third component is, therefore, zero (0) mrem/yr TEDE.

*Equation 2:*

$$19 \text{ mrem/yr}_{\text{Total}} = 17 \text{ mrem/yr}_{\text{Soil}} + 2 \text{ mrem/yr}_{\text{Existing GW}} + 0 \text{ mrem/yr}_{\text{Future GW}}$$

The allowable dose for soil in this survey unit is seventeen (17) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in seventeen (17) mrem/yr TEDE is designated as the Operational DCGL, and has been established for the radionuclides of concern as provided in Table 2

Note: The survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 to conservatively account for the contribution to the total dose from existing and future groundwater which had not been established at the time of planning the FSS.

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<b>Table 2 – Radionuclide Specific Base Case Soil DCGL, Operational DCGLs and Required Minimum Detectable Concentrations</b>			
<b>Radionuclide <sup>(1)</sup></b>	<b>Base Case Soil DCGL (pCi/g) <sup>(2)</sup></b>	<b>Operational DCGL (pCi/g) <sup>(3)</sup></b>	<b>Required MDC (pCi/g) <sup>(4)</sup></b>
<b>H-3</b>	4.12E+02	2.80E+02	1.65E+01
<b>C-14</b>	5.66E+00	3.85E+00	2.26E-01
Mn-54	1.74E+01	1.18E+01	6.96E-01
<b>Fe-55</b>	2.74E+04	1.86E+04	1.10E+03
Co-60	3.81E+00	2.59E+00	1.52E-01
<b>Ni-63</b>	7.23E+02	4.92E+02	2.89E+01
<b>Sr-90</b>	1.55E+00	1.05E+00	6.20E-02
Nb-94	7.12E+00	4.84E+00	2.85E-01
<b>Tc-99</b>	1.26E+01	8.57E+00	5.04E-01
Ag-108m	7.14E+00	4.86E+00	2.86E-01
Cs-134	4.67E+00	3.18E+00	1.87E-01
Cs-137	7.91E+00	5.38E+00	3.16E-01
Eu-152	1.01E+01	6.87E+00	4.04E-01
Eu-154	9.29E+00	6.32E+00	3.72E-01
Eu-155	3.92E+02	2.67E+02	1.57E+01
<b>Pu-238</b>	2.96E+01	2.01E+01	1.18E+00
<b>Pu-239/240</b>	2.67E+01	1.82E+01	1.07E+00
<b>Pu-241</b>	8.70E+02	5.92E+02	3.48E+01
Am-241 <sup>(5)</sup>	2.58E+01	1.75E+01	1.03E+00
<b>Cm-243/244</b>	2.90E+01	1.97E+01	1.16E+00

(1) **Bold** indicates those radionuclides considered to be Hard to Detect (HTD)

(2) The Base Case Soil DCGLs for soil are specified by the LTP in Chapter 6 and are equivalent to twenty-five (25) mrem/yr TEDE

(3) The Operational DCGL is equivalent to seventeen (17) mrem/yr TEDE

(4) The required MDC is equivalent to one (1) mrem/yr TEDE

(5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed.

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Characterization was performed in April and May of 2004 as discussed in Section 2. Cesium-137 and Cobalt-60 were found to be the predominate radionuclides of concern. The basic statistical quantities (i.e., mean, standard deviation, median) for Cs-137 and Co-60 are provided in Table 1.

As part of the DQOs applied to laboratory processes, analysis results were reported as actual calculated results. Results reported as less than Minimum Detectable Concentration (<MDC) were not accepted for FSS. Sample report

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summaries included unique sample identification, analytical method, radionuclide, result, and uncertainty to two (2) standard deviations, laboratory data qualifiers, units, and the required and observed MDC.

**4. SURVEY DESIGN**

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. To assist the FSS Engineers when preparing survey plans for FSS, guidance is provided in Procedure RPM 5.1-11, "*Preparation of Final Status Survey Plans*". By design, the FSSP meets the ALARA criteria for soils as specified in Chapter 4 of the LTP.

Characterization was performed by Site Closure personnel in April and May 2004 to determine existing conditions and obtain radiological data for Final Status Survey (FSS). The DQO process determined that Cs-137 and Co-60 would be the radionuclides of concern (refer to Section 3). The sum of fractions or unity rule would be used with the individual Operational DCGLs because multiple radionuclides (Cs-137 and Co-60) were considered in the survey design. Other radionuclides identified during FSS would be evaluated to ensure adequate survey design and compliance with the unity rule.

Surrogate DCGLs were not required for this survey unit based on process knowledge from FSS of nearby adjacent areas and via screening under LTP Section 5.4.7.2, "Gross Activity DCGLs". Radionuclide screening or de-selection is a process where an individual radionuclide or aggregate may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates.

The Elevated Measurement Comparison (EMC) did not apply to this survey unit since the survey unit is a Class 2 and discrete, elevated areas of contamination were not expected.

The Sign Test was selected as the non-parametric statistical test. The use of the Sign Test did not require the selection or use of a background reference area, which simplified survey design and implementation. This approach was conservative since it included background Cs-137 as part of the sample set.

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "*Determination of the Number of Samples for Final Status Survey*." The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 0.5 to maintain the relative shift ( $\Delta/\sigma$ ) in the range of 1 and 3. The resulting relative shift was 1.9. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10 CFR 20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design.

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Survey design specified sixteen (16) sediment samples for non-parametric statistical testing.

The grid pattern and locations of the soil samples were determined using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, "*Identifying, and Marking Surface Sample Locations for Final Status Survey.*" Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy. A systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 2 area.

Sample locations were identified using AutoCAD-LT, a commercially available plotting software package with coordinates consistent with the Connecticut State Plane System. These coordinates were integrated with a GPS to locate sample locations in the field. Sample Measurement Locations for the design are listed with the GPS coordinates in Table 3.

<b>Designation</b>	<b>Northing</b>	<b>Easting</b>
9106-0003-001F	235918.25	669524.39
9106-0003-002F	235918.25	669605.02
9106-0003-003F	235848.42	669484.07
9106-0003-004F	235848.42	669564.70
9106-0003-005F	235848.42	669645.33
9106-0003-006F	235848.42	669725.96
9106-0003-007F	235778.60	669605.02
9106-0003-008F	235778.60	669685.64
9106-0003-009F	235778.60	669766.27
9106-0003-010F	235778.60	669846.90
9106-0003-011F	235778.60	669927.53
9106-0003-012F	235778.60	670008.16
9106-0003-013F	235708.77	669806.59
9106-0003-014F	235708.77	669887.22
9106-0003-015F	235708.77	669967.85
9106-0003-016F	235708.77	670048.47

There was to be one (1) sediment core to be taken as a judgmental sample. The location was selected based on its proximity to the outfall of a culvert which drains from a low-lying area along the Independent Spent Fuel Storage Installation (ISFSI) haul road.

Although Procedure RPM 5.1-11 specifies that 5% of the samples must be selected for HTD analysis, four (4) sediment samples were analyzed for HTDs, exceeding the percentage required. Two (2) samples for statistical testing were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RAND" function. In addition, two (2) samples, which were determined to contribute the greatest dose based on gamma only analyses were also selected

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for HTD analyses. This number of HTD analyses exceeded the 5% requirement. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in Table 2.

The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*," included the collection of two (2) sediment samples for "split sample" analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel "RAND" function. The number of quality control samples exceeded the 5% requirement.

Section 5.7.3.2.6 of the LTP specifies that scanning is not required for the FSS of the Discharge Canal. Table 4 provides a synopsis of the survey design.

<b>Table 4 – Synopsis of the Survey Design <sup>(1)</sup></b>		
Feature	Design Criteria	Basis
Survey Unit Area	8,292 m <sup>2</sup>	Based on AutoCAD-LT and Visual Sample Plan calculations
Number of Measurements	16	Type 1 and Type 2 errors were 0.05, sigma was 0.257 the LBGR was set to 0.5 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 1.9
Grid Spacing	24.5	Based on triangular grid
Design DCGL	3.16 pCi/g Cs-137 1.52 pCi/g Co-60	To achieve 10 mrem/yr TEDE
Operational DCGL	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	To achieve 17 mrem/yr TEDE <sup>(2)</sup> to demonstrate compliance with Equation 2 of this Release Record
Scan Coverage	N/A	The LTP exempts this area
Sediment Investigation Level	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 2 survey unit

(1) The survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 as the total dose from existing and future groundwater had not been established at the time of planning the FSS

(2) The allowable dose for soil in this survey unit is seventeen (17) mrem/yr TEDE as the total dose from existing and future groundwater has been established (reference CY memo ISC 06-024)

**5. SURVEY IMPLEMENTATION**

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0021. The WP&IR package included a detailed FSSP, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

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Using GPS coordinates, sample measurement locations were identified in NAD 1927 coordinates that were supplied to the sampling vendor, Ocean Survey Inc. (OSI) of Old Saybrook, Connecticut. Discharge Canal sampling was accomplished using direct push technology to collect composite samples of bottom and average high water mark sediments. Sediment cores from the Discharge Canal were obtained by OSI using a vibrating corer that is platform mounted on a sampling vessel. The core barrel was a three (3) inch diameter thin-walled aluminum tube which also serves as a core liner (ten (10) feet or less). A core catcher was available to prevent the sample from sliding out of the bottom of the tube. Vessel positioning and the determination of sample locations will be accomplished using a global positioning system (GPS) interfaced with a navigation and data logging system.

After extraction, water was drained from above the sample by drilling holes above the sediment. The liner was cut, capped, sealed, labeled and turned over from the Ocean Surveys, Inc. to site personnel who processed and controlled the samples under Chain-of-Custody (COC). Rinsing of the barrel and associated equipment was performed between sampling events. New aluminum tubes were used to prevent cross-contamination of subsequent samples.

The sixteen (16) sediment samples were collected and packaged in accordance with Haddam Neck Plant (HNP) Procedure RPM 5.1-3, "*Collection of Sample Media for Final Status Survey*" and FSS design. Samples were controlled, transported, stored, and transferred to the off-site laboratory using Chain-of-Custody (COC) protocol in accordance with Procedure RPM 5.1-5, "*Chain of Custody for Final Status Survey Samples*".

Four (4) samples (9106-0003-004F, 9106-0003-008F, 9106-0003-0014 and 9106-0003-015F) were selected for HTD radionuclide analysis by the off-site laboratory. Two (2) of these samples (008F and 014F) were selected at random. The others were selected based on being the most dosimetrically significant samples from spectroscopic gamma analyses.

One (1) biased sediment sample (9106-0003-017F) was collected and analyzed by the offsite laboratory for gamma spectroscopy.

The implementation of survey specific quality control measures included the collection of two (2) split samples at locations 9106-0003-004F and 9106-0003-010F for "split sample" analysis by the off-site laboratory.

## 6. SURVEY RESULTS

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories (GEL) – Charleston, South Carolina. The laboratory analyzed the sixteen (16) samples taken for non-parametric statistical testing and the associated duplicates using gamma spectroscopy. Gamma

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spectroscopy analysis was performed to the required MDC. Gamma spectroscopy results identified some radionuclides meeting the acceptance criteria for detection (i.e., a result greater than two standard deviations uncertainty). All could be de-selected or excluded using the 5% and 10% rule described in Section 4.

Cesium-137 was identified in fourteen (14) and Co-60 was identified in eleven (11) of the sixteen (16) samples.

None of the samples exceeded the Operational DCGL. Gamma spectroscopy sample analysis did not require further investigation. A summary of the sample results is provided in Table 5.

<b>Table 5- Summary of Sediment Sample Results</b>				
<b>Sample Number</b>	<b>Cs-137 pCi/g</b>	<b>Co-60 pCi/g</b>	<b>Fraction of the Operational DCGL <sup>(1)</sup></b>	
			<b>Nuclides of concern</b>	<b>Unity (Sign Test) <sup>(2)</sup></b>
9106-0003-001F	1.28E-01	1.07E-01	1.11E-01	1.48E-01
9106-0003-002F	4.37E-02	1.89E-02	2.63E-02	6.35E-02
9106-0003-003F	3.93E-02	2.45E-02	2.86E-02	6.58E-02
9106-0003-004F	2.92E-01	7.43E-01	5.81E-01	5.95E-01
9106-0003-005F	2.10E-01	1.36E-01	1.56E-01	1.93E-01
9106-0003-006F	1.05E-01	1.86E-02	4.55E-02	8.27E-02
9106-0003-007F	2.64E-02	2.90E-02	2.74E-02	6.47E-02
9106-0003-008F	2.46E-01	1.09E-01	1.50E-01	2.41E-01
9106-0003-009F	3.18E-01	4.45E-01	3.93E-01	4.31E-01
9106-0003-010F	2.04E-01	2.28E-01	2.15E-01	2.52E-01
9106-0003-012F	4.27E-02	1.45E-02	2.31E-02	6.03E-02
9106-0003-013F	1.96E-02	2.41E-02	2.21E-02	5.93E-02
9106-0003-014F	2.91E-01	4.33E-01	3.77E-01	4.09E-01
9106-0003-015F	2.57E-01	8.05E-01	6.11E-01	6.22E-01
9106-0003-016F	3.52E-04	2.02E-02	1.34E-02	5.06E-02
9106-0003-018F	1.90E-01	1.85E-01	1.82E-01	2.19E-01

(1) The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60; these are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE

(2) This column is the sum of the DCGL unity fraction from identified radionuclides of concern and HTD isotope (Pu-241) exceeding the 5%/10% rule for one or more FSS samples. For those samples not measured for HTD isotopes, an average calculated value of 6.1% of the DCGL was added to each sample.

The sample location designations of Table 5 are not sequentially inclusive because of the necessity to relocate some samples due to the accessibility of the original sample locations. Sample number 9106-0003-011F could not be sampled due to an obstruction. Therefore sample number 9106-0003-018F was added as a replacement sample. Sample number 9106-0003-017F was a biased sample location; not part of the non-parametric design.

The off-site laboratory also processed four (4) samples for HTD analysis as required by the sample plan. The requested analyses included alpha

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spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC. Four (4) of the HTD radionuclides met the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty) in more than one (1) sample. Each of the positive results for HTD radionuclides could be de-selected based on the 5% and 10% rules, except for Pu-241. These results are presented in Table 6.

Sample Number	Pu 241 pCi/g	Fraction of the Operational DCGL <sup>(1)</sup>
9106-0003-004F	8.31	0.014
9106-0003-008F	54.2	0.092
9106-0003-014F	19.0	0.032
9106-0003-015F	6.63	0.011

(1) The Operational DCGL from Table 2 is 592 pCi/g for Pu-241.

One (1) biased sample was collected at a location selected by FSS Supervision based on professional judgment and observation. Gamma spectroscopy analysis was performed by the off-site laboratory to the required MDC. The sample was at 0.8% of the Operational DCGL. No further action or investigations were required (see Table 7).

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Fraction of the Operational DCGL <sup>(1)</sup>
9106-0003-017F	0.00E+00	2.08E-02	0.008

(1) The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 and are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE

## 7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Two (2) of the samples were selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey." There was acceptable agreement between the field split results for both of the "split sample" pairs tested.

The sample analysis vendor, General Engineering Laboratories (GEL) – Charleston, South Carolina, maintained quality control and quality assurance plans as part of normal operation. Refer to Attachment 2 for data and data quality analysis results.

DISCHARGE CANAL  
SURVEY UNIT 9106-0003

RELEASE RECORD

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**8. INVESTIGATIONS AND RESULTS**

Sample investigation levels were not exceeded for this unit, consequently none were performed.

**9. REMEDIATION AND RESULTS**

Historically, no radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to or as a result of the FSS. Health Physics TSD BCY-HP-0078, "*ALARA Evaluation of Soil Remediation in Support of Final Status Survey*," determined that remediation beyond that required to meet the release criteria to be unnecessary and that the remaining residual radioactivity in soil was ALARA.

**10. CHANGES FROM THE FINAL STATUS SURVEY PLAN**

The survey was designed to ten (10) mrem/yr TEDE which was conservative and necessary at the time of FSS planning. It is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used to demonstrate compliance with the LTP and CTDEP criteria is seventeen (17) mrem/yr TEDE as discussed in Section 2 of this Release Record.

**11. DATA QUALITY ASSESSMENT (DQA)**

The DQO sample design and data were reviewed in accordance with Procedure RPM 5.1-23, "*Data Quality Assessment*." The sample design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. The evaluation of the Sign Test results indicates that the survey unit passes the unrestricted release criterion, thus, the null hypothesis is rejected.

Documentation was complete and legible. Surveys and sample collection were consistent with the DQOs and were sufficient to ensure that the survey unit was properly designated as Class 2.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The standard deviation of the sample results was below the design value used. This is represented by a favorable shift in the retrospective power curve as shown in Attachment 2f. This would indicate the retrospective power exceeds the prospective power, indicating that the design sample population was adequate. The mean and median values are well below the Operational DCGL when used in conjunction with the unity rule. Therefore, the survey unit meets the unrestricted release criterion with adequate power as required by the DQOs.

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The range of the data, about 2.98 standard deviations, was not unusually large. The difference between the mean and median was 5.5% of the standard deviation which indicates limited skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot shows some positive skewness as confirmed by the calculated skew of 1.2.

All data, assessments, and graphical representations are provided in Attachment 2.

**12. ANOMALIES**

An anomaly was encountered at one non-parametric sample location which could not be sampled due to an obstruction. The sample (9106-0003-011F) was replaced with another randomly generated location (9106-0003-018F). This is noted in the field notes and other documentation associated with this survey unit.

In addition, one HTD radionuclide was reported in concentrations exceeding the 5% and 10% rule for de-selection. Therefore, the individual Operational DCGLs for Pu-239 was included into sample analyses in conjunction with the unity rule to ensure adequate survey design in accordance with the DQOs. The result of the COMPASS computer run showed adequate power and maintained the original sixteen (16) sediment samples for non-parametric statistical testing.

**13. CONCLUSION**

Survey Unit 9106-0003 has met the final DQOs of the FSS. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

The sample data passed the Sign Test. The null hypothesis was rejected. Graphical representation of data indicates some positive skewness that is probably due to the differences in terrain and the collection of runoff. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit was properly designated as Class 2.

The dose contribution from soil is 4.3 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

This survey unit is affected by existing groundwater (reference CY memo ISC 06-024). Therefore, the dose contribution from existing groundwater is two (2) mrem/yr TEDE.

This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no concrete foundations or footings containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater, the third dose component, is therefore 0 mrem/yr TEDE.

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The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 6.3 mrem/yr Total Effective Dose Equivalent (TEDE).

**14. ATTACHMENTS**

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Sample and Statistical Data

DISCHARGE CANAL  
SURVEY UNIT 9106-0003  
RELEASE RECORD

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Attachment 1  
Figures  
(5 pages)

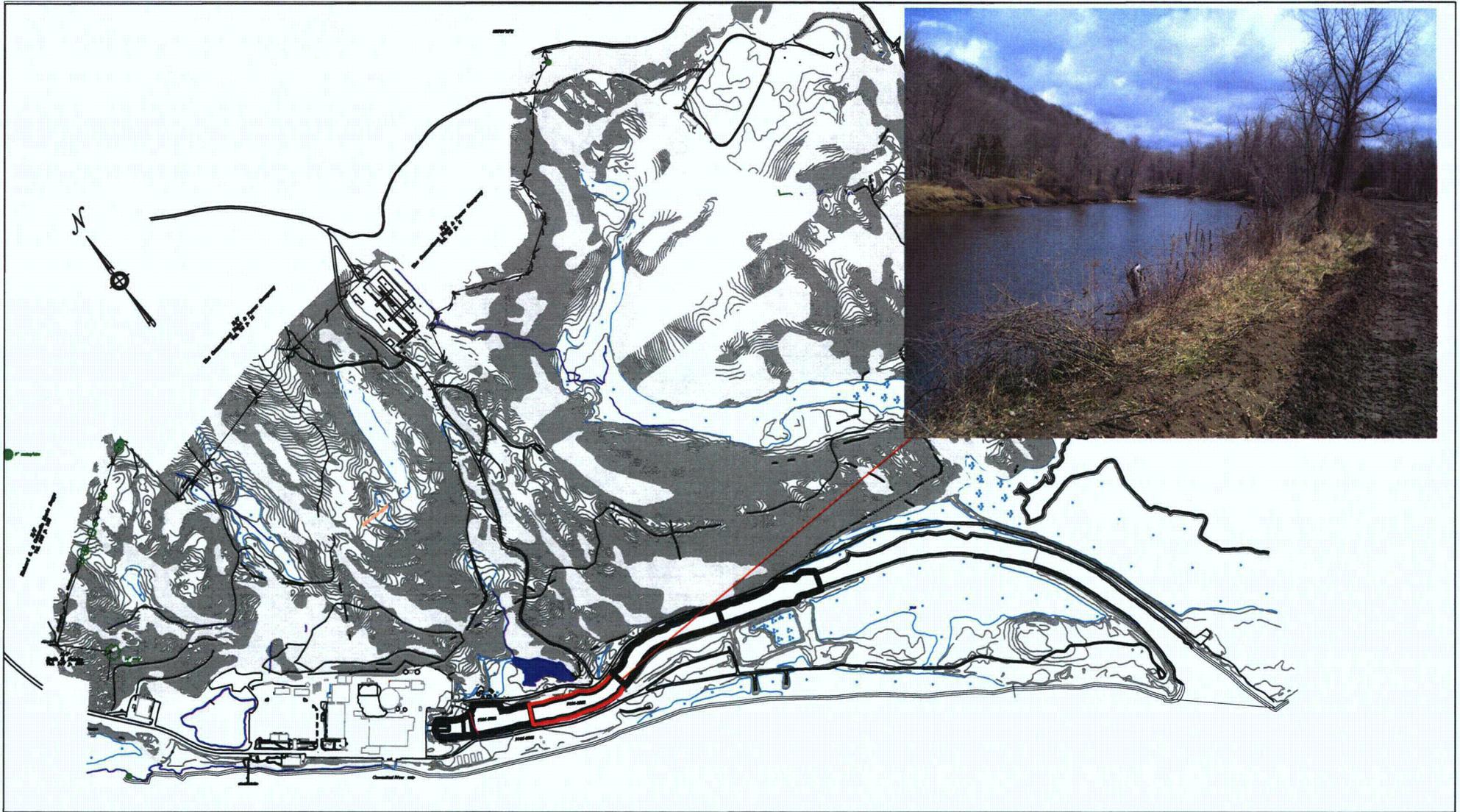


Figure 1

*Connecticut Yankee Atomic Power Company*  
*Site Map With Reference To Survey Unit 9106-0003*

<i>Date</i>	<i>By</i>
<i>October 2006</i>	<i>E. Sargent</i>

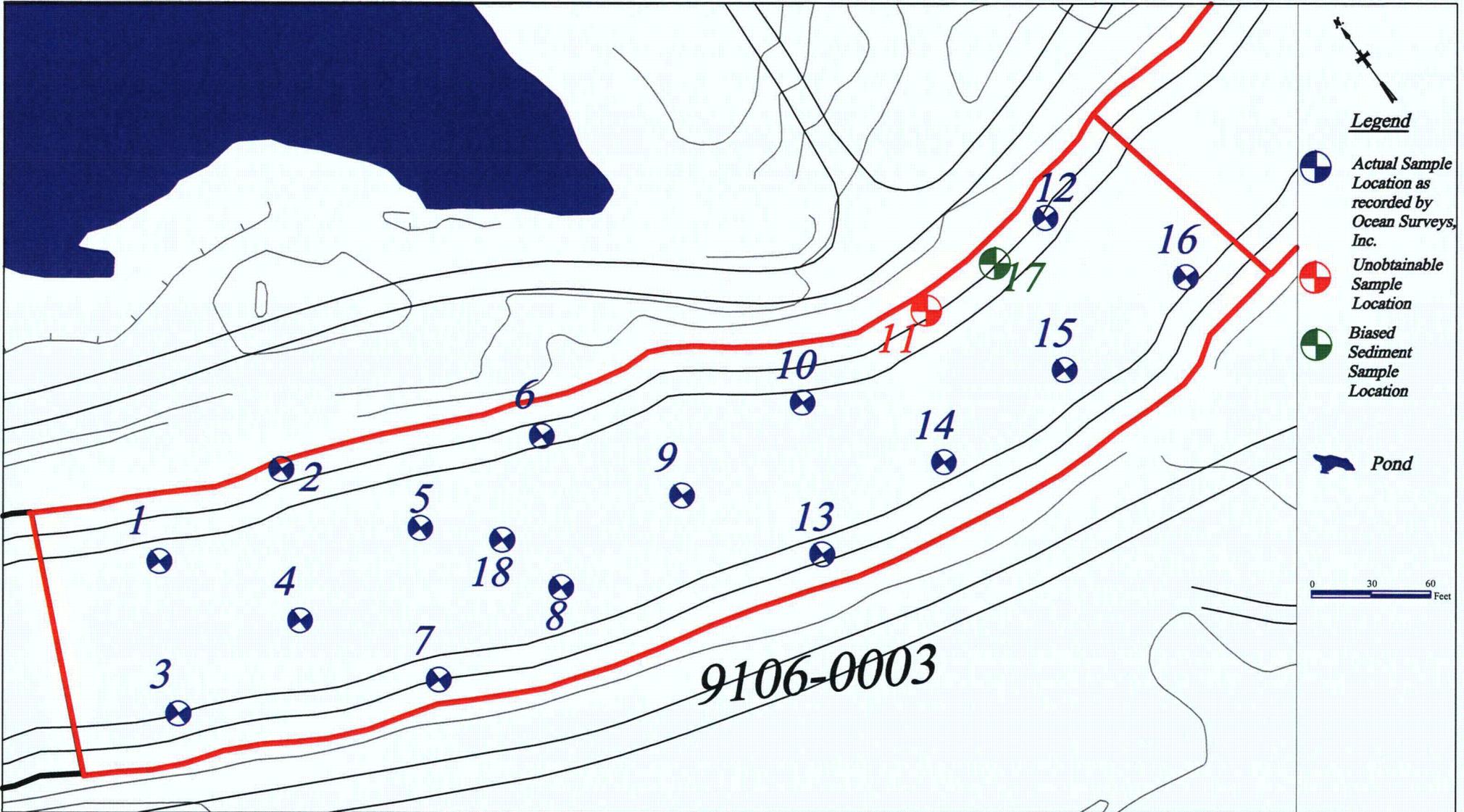


Figure 2

Connecticut Yankee Atomic Power Company  
 9106-0003 Final Status Survey Sample Locations

Date	By
October 2006	E. Sergent

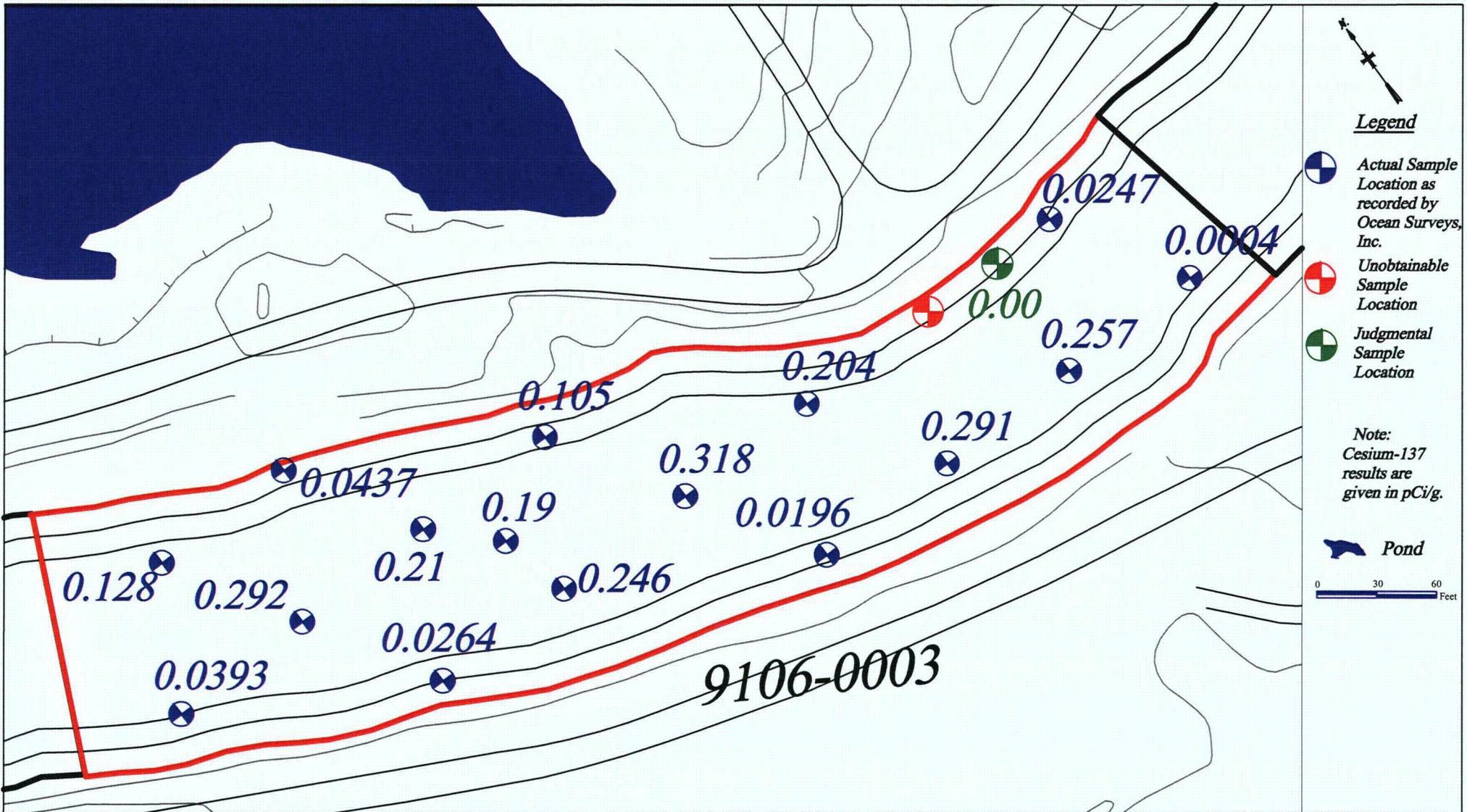


Figure 3

Connecticut Yankee Atomic Power Company  
 9106-0003 Final Status Survey  
 Cesium-137 Posting Plot

Date	By
October 2006	E. Sergent

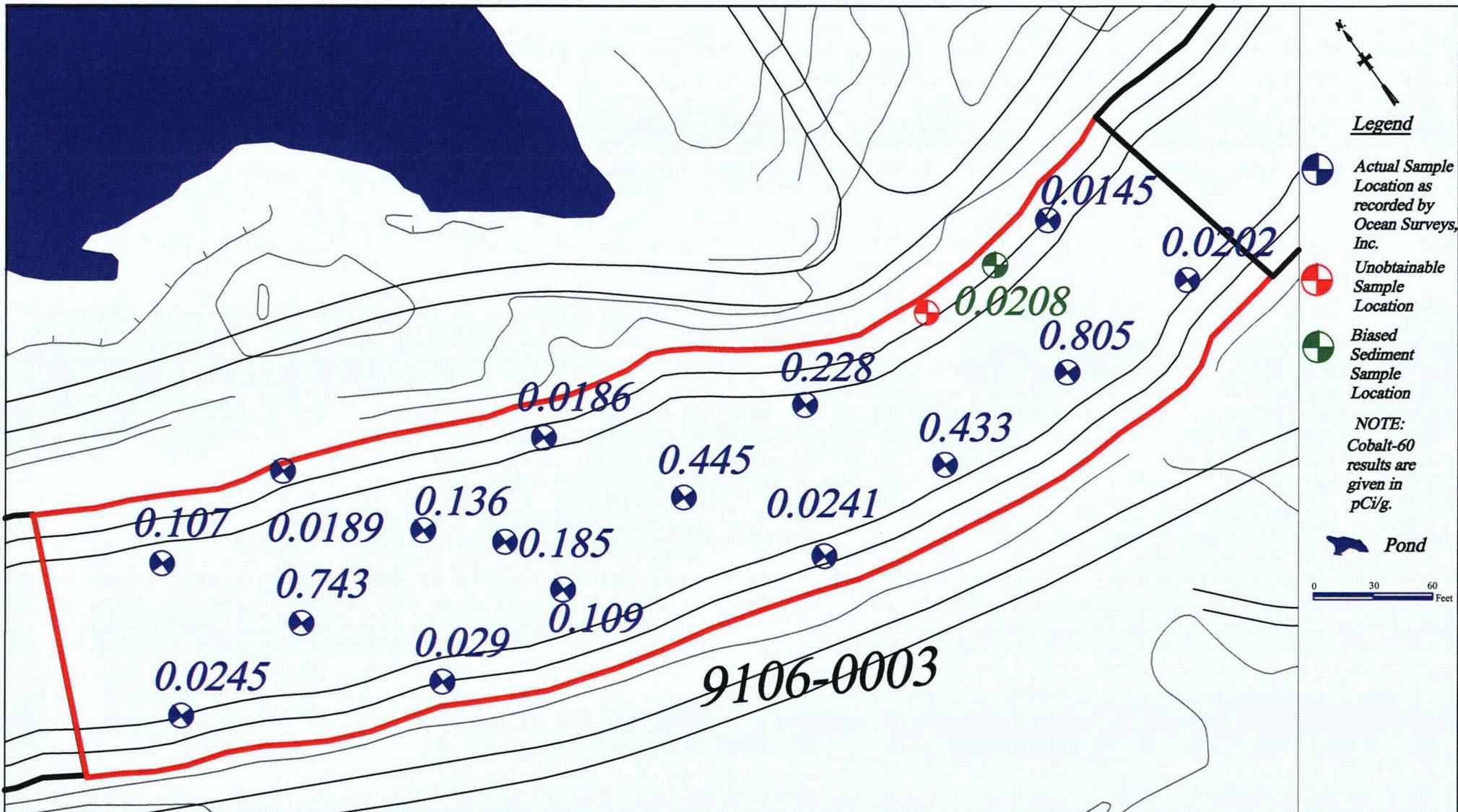


Figure 4

Connecticut Yankee Atomic Power Company  
 9106-0003 Final Status Survey Sample Locations  
 Cobalt-60 Posting Plot

Date	By
October 2006	E. Sergent

DISCHARGE CANAL  
SURVEY UNIT 9106-0003  
RELEASE RECORD

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Attachment 2a  
Sample Data  
(186 Pages)

## Table of Contents

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<b>Radiological Analysis</b> .....	<b>1</b>
Sample Data Summary .....	22
Quality Control Data .....	64

# **General Narrative**

**CASE NARRATIVE**  
**For**  
**CONNECTICUT YANKEE**  
**RE: Sediment**  
**PO# 002332**  
**Work Order: 162335**  
**SDG: MSR #06-0652**

**June 2, 2006**

**Laboratory Identification:**

General Engineering Laboratories, LLC

**Mailing Address:**

P.O. Box 30712  
Charleston, South Carolina 29417

**Express Mail Delivery and Shipping Address:**

2040 Savage Road  
Charleston, South Carolina 29407

**Telephone Number:**

(843) 556-8171

**Summary:**

**Sample receipt**

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on May 5, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<b><u>Sample ID</u></b>	<b><u>Client Sample ID</u></b>
162335001	9106-0003-001F
162335002	9106-0003-002F
162335003	9106-0003-003F
162335004	9106-0003-004F
162335005	9106-0003-004FS
162335006	9106-0003-005F
162335007	9106-0003-006F

<u>Sample ID</u>	<u>Client Sample ID</u>
162335008	9106-0003-007F
162335009	9106-0003-009F
162335010	9106-0003-010F
162335011	9106-0003-010FS
162335012	9106-0003-012F
162335013	9106-0003-013F
162335014	9106-0003-015F
162335015	9106-0003-016F
162335016	9106-0003-017F
162335017	9106-0003-018F
162335018	9106-0003-008F
162335019	9106-0003-014F

**Items of Note:**

There are no items of note.

**Case Narrative:**

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

**Analytical Request:**

Seventeen sediment samples were analyzed for FSSGAM.  
Two sediment samples were analyzed for FSSALL.

**Internal Chain of Custody:**

Custody was maintained for the sample(s).

**Data Package:**

The enclosed data package contains the following sections: Case Narrative, Chain of Custody and Supporting Documentation and all analytical fractions.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



Cheryl Jones  
Project Manager

**Chain of Custody  
and  
Supporting  
Documentation**

### Chain of Custody Form

No. 2006-00313

#### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

~~162334~~ 162335

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested				Lab Use Only				
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90	Comments					
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL	Sr-90			Comment, Preservation	Lab Sample ID		
9106-0003-009F	4/25/06	13:00	SE	C	BP	X					Transferred from COC 2006-00236			
9106-0003-010F	4/25/06	13:23	SE	C	BP	X					Transferred from COC 2006-00236			
9106-0003-010FS	4/25/06	13:23	SE	C	BP	X					Transferred from COC 2006-00236			
9106-0003-012F	4/25/06	15:12	SE	C	BP	X					Transferred from COC 2006-00236			
9106-0003-013F	4/25/06	14:21	SE	C	BP	X					Transferred from COC 2006-00236			
9106-0003-014F	4/25/06	14:48	SE	C	BP		X				Transferred from COC 2006-00236			
9106-0003-015F	4/26/06	08:16	SE	C	BP	X					Transferred from COC 2006-00237			
9106-0003-016F	4/26/06	09:41	SE	C	BP	X					Transferred from COC 2006-00237			
9106-0003-017F	4/26/06	09:18	SE	C	BP	X					Transferred from COC 2006-00237			
9106-0003-018F	4/26/06	08:59	SE	C	BP	X					Transferred from COC 2006-00237			
NOTES: PO #: 002332 MSR #: 06- <sup>0652</sup> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: _____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAIME RICARTE			Date/Time 5-1-06/1330		2) Received By C. Derricuto			Date/Time 5/5/06/1015		Bill of Lading # 7920-8920-0261				
3) Relinquished By			Date/Time		4) Received By			Date/Time						

019  
018  
011  
012  
013  
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016  
017

**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00312

*162334* *162335* *CO 5/8/06*

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested				Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90				Comments
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones												
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.												

9106-0003-001F  
9106-0003-002F  
9106-0003-003F  
9106-0003-004F  
9106-0003-004FS  
9106-0003-005F  
9106-0003-006F  
9106-0003-007F  
9106-0003-008F

Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL	Sr-90	Comment, Preservation	Lab Sample ID
9106-0003-001F	4/24/06	14:13	SE	C	BP	X			Transferred from COC2006-00221	
9106-0003-002F	4/24/06	14:39	SE	C	BP	X			Transferred from COC2006-00221	
9106-0003-003F	4/24/06	15:01	SE	C	BP	X			Transferred from COC2006-00221	
9106-0003-004F	4/25/06	08:41	SE	C	BP	X			Transferred from COC2006-00223	
9106-0003-004FS	4/25/06	08:41	SE	C	BP	X			Transferred from COC2006-00223	
9106-0003-005F	4/25/06	09:21	SE	C	BP	X			Transferred from COC2006-00223	
9106-0003-006F	4/25/06	09:46	SE	C	BP	X			Transferred from COC2006-00223	
9106-0003-007F	4/25/06	10:28	SE	C	BP	X			Transferred from COC2006-00223	
9106-0003-008F	4/25/06	11:15	SE	C	BP		X		Transferred from COC2006-00223	

NOTES: PO #: 002332 MSR #: 06-<sup>0652</sup> SSWP# NA  LTP QA  Radwaste QA  Non QA  
 Combined samples 9106-0003-003F taken on 4/25/06 @08:19 and 9106-0003-003FB taken on 4/25/06 @ 08:19 in order to have sufficient sample for counting.

Samples Shipped Via:  
 Fed Ex  
 UPS  
 Hand  
 Other

Internal Container Temp. \_\_\_\_\_ Deg. C  
 Custody Sealed? Y  N   
 Custody Seal Intact? Y  N

1) Relinquished By <i>JANIE RICARTE</i>	Date/Time <i>5-4-06 / 13:30</i>	2) Received By <i>C. Demicatto</i>	Date/Time <i>5/5/06 / 10:15</i>
3) Relinquished By	Date/Time	4) Received By	Date/Time
5) Relinquished By	Date/Time	6) Received By	Date/Time

Bill of Lading #  
*7920-8920-0240*

Cheryl

162335

Figure 1. Sample Check-in List

Date/Time Received: 5/5/06 1015.

SDG#: MSR#06-0652

Work Order Number: 162335

Shipping Container ID: 7920 8920 0261 Chain of Custody # 2006-00312  
" " 0240 2006-00313

1. Custody Seals on shipping container intact? Yes  No

2. Custody Seals dated and signed? Yes  No

3. Chain-of-Custody record present? Yes  No

4. Cooler temperature 19°C

5. Vermiculite/packing materials is: Wet  Dry  n/a

6. Number of samples in shipping container: [10] ten / [9] nine

7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input checked="" type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sample Custodian/Laboratory: C. Derricotte Date: 5/5/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only 162335

Client: <u>Yankel</u>	SDG/ARCO/Work Order:
Date Received: <u>COA 5/5/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>C. Derricotte</u>	<u>Clyde</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant # ice bags blue ice dry ice none <u>other describe</u> <u>1900</u> <u>Peanutts</u>
3 Chain of custody documents included with shipment?	✓			
4 Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8 Samples received within holding time?	✓			id's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11 Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	✓			
14 Air Bill, Tracking #'s, & Additional Comments				<u>FedEx #</u> <u>7920 8920 0261</u> <u>" " 0240</u>

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?		✓		Maximum Counts Observed*: <u>30 CPM</u>
B PCB Regulated?	✓			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification: _____				Initials <u>ADJ</u> Date: <u>5/5/06</u>

# **RADIOLOGICAL ANALYSIS**

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 162335**

**Method/Analysis Information**

**Product:** Alphaspec Am241, Cm, Solid ALL FSS  
**Analytical Method:** DOE EML HASL-300, Am-05-RC Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 530940  
**Prep Batch Number:** 527706  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 527705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201095113	Method Blank (MB)
1201095114	162335018(9106-0003-008F) Sample Duplicate (DUP)
1201095115	162335018(9106-0003-008F) Matrix Spike (MS)
1201095116	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335018 (9106-0003-008F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Alphaspec Pu, Solid-ALL FSS  
Analytical Method: DOE EML HASL-300, Pu-11-RC Modified  
Prep Method: Ash Soil Prep  
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep  
Analytical Batch Number: 530942  
Prep Batch Number: 527706  
Dry Soil Prep GL-RAD-A-021 Batch Number: 527705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201095121	Method Blank (MB)
1201095122	162335018(9106-0003-008F) Sample Duplicate (DUP)
1201095123	162335018(9106-0003-008F) Matrix Spike (MS)
1201095124	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 162335018 (9106-0003-008F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Pu241, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	530943
Prep Batch Number:	527706
Dry Soil Prep GL-RAD-A-021 Batch Number:	527705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201095125	Method Blank (MB)
1201095126	162335018(9106-0003-008F) Sample Duplicate (DUP)
1201095127	162335018(9106-0003-008F) Matrix Spike (MS)
1201095128	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335018 (9106-0003-008F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from

referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Gamma,Solid-FSS GAM &amp; ALL FSS</b>
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	528196
Prep Batch Number:	527705

<b>Sample ID</b>	<b>Client ID</b>
162335001	9106-0003-001F
162335002	9106-0003-002F
162335003	9106-0003-003F
162335004	9106-0003-004F
162335005	9106-0003-004FS
162335006	9106-0003-005F
162335007	9106-0003-006F
162335008	9106-0003-007F
162335009	9106-0003-009F
162335010	9106-0003-010F
162335011	9106-0003-010FS
162335012	9106-0003-012F
162335013	9106-0003-013F
162335014	9106-0003-015F
162335015	9106-0003-016F
162335016	9106-0003-017F
162335017	9106-0003-018F
162335018	9106-0003-008F
162335019	9106-0003-014F
1201088599	Method Blank (MB)
1201088600	162335001(9106-0003-001F) Sample Duplicate (DUP)
1201088601	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 11.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335001 (9106-0003-001F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high Full-Width Half-Maximum.	Bismuth-214	1201088599
		Cesium-137	162335016
		Manganese-54	162335019
UI	Data rejected due to interference.	Europium-155	162335018
UI	Data rejected due to low abundance.	Cesium-134	162335002
			162335003
			162335004
			162335006
			162335007
			162335009
			162335010
			162335011
			162335012
			162335015
		Cobalt-60	162335011
		Radium-226	1201088599

**Method/Analysis Information**

**Product:** GFPC, Sr90, solid-ALL FSS

Analytical Method: EPA 905.0 Modified

Prep Method: Ash Soil Prep

Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep

Analytical Batch Number: 535512

Prep Batch Number: 527706

Dry Soil Prep GL-RAD-A-021 Batch Number: 527705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201105909	Method Blank (MB)
1201105910	162335018(9106-0003-008F) Sample Duplicate (DUP)
1201105911	162335018(9106-0003-008F) Matrix Spike (MS)
1201105912	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335018 (9106-0003-008F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 531704

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201096867	Method Blank (MB)
1201096868	162583001(NOL-02-02-005-F-S) Sample Duplicate (DUP)
1201096869	162583001(NOL-02-02-005-F-S) Matrix Spike (MS)
1201096870	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162583001 (NOL-02-02-005-F-S).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Sample 162335018 (9106-0003-008F) was recounted due to high MDA.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	535483
Prep Batch Number:	527706
Dry Soil Prep GL-RAD-A-021 Batch Number:	527705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201105872	Method Blank (MB)
1201105873	162335018(9106-0003-008F) Sample Duplicate (DUP)
1201105874	162335018(9106-0003-008F) Matrix Spike (MS)
1201105875	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335018 (9106-0003-008F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples were re-prepped due to low/high carrier/tracer yield.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Ni63, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	527978
Prep Batch Number:	527706
Dry Soil Prep GL-RAD-A-021 Batch Number:	527705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201088147	Method Blank (MB)
1201088148	162335018(9106-0003-008F) Sample Duplicate (DUP)
1201088149	162335018(9106-0003-008F) Matrix Spike (MS)
1201088150	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335018 (9106-0003-008F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG: NCR 321720 was generated due to Container scanning event for custody missed. 1. The analyst did not scan the samples 162335018 and 162335019 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on the proper scanning procedures. 1. Reporting results.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS  
**Analytical Method:** EPA 906.0 Modified  
**Analytical Batch Number:** 531705

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201096877	Method Blank (MB)
1201096878	162583001(NOL-02-02-005-F-S) Sample Duplicate (DUP)
1201096879	162583001(NOL-02-02-005-F-S) Matrix Spike (MS)
1201096880	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 11.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162583001 (NOL-02-02-005-F-S).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Sample 1201096877 (MB) was recounted due to high MDA.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint C14, Solid All,FSS</b>
Analytical Method:	EPA EERF C-01 Modified
Analytical Batch Number:	534837

<b>Sample ID</b>	<b>Client ID</b>
162335018	9106-0003-008F
162335019	9106-0003-014F
1201104384	Method Blank (MB)
1201104385	162335019(9106-0003-014F) Sample Duplicate (DUP)
1201104386	162335019(9106-0003-014F) Matrix Spike (MS)
1201104387	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 162335019 (9106-0003-014F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples 1201104385 (9106-0003-014F), 162335018 (9106-0003-008F) and 162335019 (9106-0003-014F) were recounted due to high MDAs. Samples were reprepared due to low/high recovery.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the

data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer/Date:                     *K. Bell* 6/7/06

<b>COMPANY - WIDE NONCONFORMANCE REPORT</b>			
<b>Mo.Day Yr.</b> 01-JUN-06	<b>Division:</b> Radiochemistry	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> BIOASSAY LSC	<b>Test / Method:</b> DOE RESL Ni-1, Modified	<b>Matrix Type:</b> Solid	<b>Client Code:</b> YANK
<b>Batch ID:</b> 527978	<b>Sample Numbers:</b> See Below		
<b>Potentially affected work order(s)(SDG): 162335(MSR#06-0652)</b>			
<b>Application Issues:</b> Container scanning event for custody missed			
<b>Specification and Requirements</b>		<b>NRG Disposition:</b>	
<b>Nonconformance Description:</b>			
<p>1. The analyst did not scan the samples 162335018 and 162335019 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on the proper scanning procedures.</p>		<p>1. Reporting results.</p>	

**Originator's Name:**  
 Melanie Aycock      01-JUN-06

**Data Validator/Group Leader:**  
 Heather Anderson      08-JUN-06

**Quality Review:**

**Director:**

# SAMPLE DATA SUMMARY

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-0652 GEL Work Order: 162335

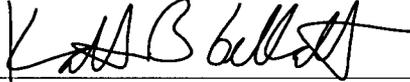
**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the reporting limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by \_\_\_\_\_

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID:	9106-0003-001F	Project:	YANK01204
Sample ID:	162335001	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	24-APR-06		
Receive Date:	05-MAY-06		
Collector:	Client		
Moisture:	15.7%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.640	+/-0.149	0.0501	+/-0.149	0.106	pCi/g		MJH1	05/31/06	1021	528196	1
Americium-241	U	0.00555	+/-0.0707	0.0612	+/-0.0707	0.126	pCi/g						
Bismuth-212		0.351	+/-0.281	0.0993	+/-0.281	0.211	pCi/g						
Bismuth-214		0.462	+/-0.0847	0.0266	+/-0.0847	0.0557	pCi/g						
Cesium-134	U	0.00674	+/-0.0184	0.0164	+/-0.0184	0.0346	pCi/g						
Cesium-137		0.128	+/-0.0361	0.0135	+/-0.0361	0.0285	pCi/g						
Cobalt-60		0.107	+/-0.0311	0.0144	+/-0.0311	0.0312	pCi/g						
Europium-152	U	0.00641	+/-0.043	0.0342	+/-0.043	0.0713	pCi/g						
Europium-154	U	-0.015	+/-0.0505	0.0422	+/-0.0505	0.0909	pCi/g						
Europium-155	U	0.0713	+/-0.0618	0.0381	+/-0.0618	0.0785	pCi/g						
Lead-212		0.670	+/-0.0714	0.0212	+/-0.0714	0.0439	pCi/g						
Lead-214		0.562	+/-0.0771	0.0248	+/-0.0771	0.0517	pCi/g						
Manganese-54	U	-0.0119	+/-0.0207	0.0145	+/-0.0207	0.0307	pCi/g						
Niobium-94	U	0.0123	+/-0.0151	0.0139	+/-0.0151	0.0292	pCi/g						
Potassium-40		10.9	+/-0.996	0.131	+/-0.996	0.285	pCi/g						
Radium-226		0.462	+/-0.0847	0.0266	+/-0.0847	0.0557	pCi/g						
Silver-108m	U	0.0049	+/-0.0138	0.0123	+/-0.0138	0.0258	pCi/g						
Thallium-208		0.229	+/-0.0399	0.0131	+/-0.0399	0.0277	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

**GENERAL ENGINEERING LABORATORIES, LLC**  
 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-001F Project: YANK01204  
 Sample ID: 162335001 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	-----

- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-002F  
Sample ID: 162335002  
Matrix: Soil  
Collect Date: 24-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 24.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.816	+/-0.163	0.0714	+/-0.163	0.153	pCi/g		MJH1	05/31/06	1021	528196	1
Americium-241	U	-0.00658	+/-0.123	0.0837	+/-0.123	0.172	pCi/g						
Bismuth-212		0.668	+/-0.340	0.141	+/-0.340	0.302	pCi/g						
Bismuth-214		0.737	+/-0.107	0.0333	+/-0.107	0.0707	pCi/g						
Cesium-134	UUI	0.00	+/-0.0349	0.0284	+/-0.0349	0.0597	pCi/g						
Cesium-137		0.0437	+/-0.0291	0.0186	+/-0.0291	0.0396	pCi/g						
Cobalt-60	U	0.0189	+/-0.0258	0.0235	+/-0.0258	0.0509	pCi/g						
Europium-152	U	-0.03	+/-0.0655	0.0538	+/-0.0655	0.112	pCi/g						
Europium-154	U	-0.0149	+/-0.0654	0.0546	+/-0.0654	0.120	pCi/g						
Europium-155	U	0.0749	+/-0.080	0.0496	+/-0.080	0.102	pCi/g						
Lead-212		1.06	+/-0.0751	0.0297	+/-0.0751	0.0615	pCi/g						
Lead-214		0.789	+/-0.0858	0.0373	+/-0.0858	0.0779	pCi/g						
Manganese-54	U	-0.0111	+/-0.0254	0.0206	+/-0.0254	0.0439	pCi/g						
Niobium-94	U	0.0103	+/-0.0214	0.0189	+/-0.0214	0.0399	pCi/g						
Potassium-40		12.5	+/-0.989	0.148	+/-0.989	0.334	pCi/g						
Radium-226		0.737	+/-0.107	0.0333	+/-0.107	0.0707	pCi/g						
Silver-108m	U	0.00613	+/-0.0206	0.0174	+/-0.0206	0.0366	pCi/g						
Thallium-208		0.340	+/-0.0571	0.0182	+/-0.0571	0.0387	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-002F  
Sample ID: 162335002

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID:	9106-0003-003F	Project:	YANK01204
Sample ID:	162335003	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	24-APR-06		
Receive Date:	05-MAY-06		
Collector:	Client		
Moisture:	12.6%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.691	+/-0.118	0.0423	+/-0.118	0.0912	pCi/g		MJH1	05/31/06	1022	528196	1
Americium-241	U	0.0567	+/-0.087	0.0631	+/-0.087	0.130	pCi/g						
Bismuth-212		0.546	+/-0.249	0.102	+/-0.249	0.218	pCi/g						
Bismuth-214		0.557	+/-0.0675	0.0257	+/-0.0675	0.0542	pCi/g						
Cesium-134	UUI	0.00	+/-0.027	0.0184	+/-0.027	0.0387	pCi/g						
Cesium-137		0.0393	+/-0.0252	0.0139	+/-0.0252	0.0293	pCi/g						
Cobalt-60	U	0.0245	+/-0.0188	0.018	+/-0.0188	0.0385	pCi/g						
Europium-152	U	0.0141	+/-0.0403	0.0369	+/-0.0403	0.0769	pCi/g						
Europium-154	U	-0.0796	+/-0.0517	0.0374	+/-0.0517	0.0818	pCi/g						
Europium-155	U	0.0703	+/-0.0578	0.0397	+/-0.0578	0.0816	pCi/g						
Lead-212		0.715	+/-0.0498	0.0219	+/-0.0498	0.0453	pCi/g						
Lead-214		0.693	+/-0.0729	0.0281	+/-0.0729	0.0583	pCi/g						
Manganese-54	U	0.00312	+/-0.0175	0.0153	+/-0.0175	0.0323	pCi/g						
Niobium-94	U	-0.00416	+/-0.0165	0.0123	+/-0.0165	0.026	pCi/g						
Potassium-40		9.93	+/-0.658	0.110	+/-0.658	0.246	pCi/g						
Radium-226		0.557	+/-0.0675	0.0257	+/-0.0675	0.0542	pCi/g						
Silver-108m	U	-0.0208	+/-0.015	0.0121	+/-0.015	0.0253	pCi/g						
Thallium-208		0.197	+/-0.037	0.0139	+/-0.037	0.0293	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-003F  
Sample ID: 162335003

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-004F  
 Sample ID: 162335004  
 Matrix: Soil  
 Collect Date: 25-APR-06  
 Receive Date: 05-MAY-06  
 Collector: Client  
 Moisture: 20.9%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.743	+/-0.177	0.0741	+/-0.177	0.157	pCi/g		MJH1	05/31/06	1022	528196	1
Americium-241	U	0.080	+/-0.0848	0.0694	+/-0.0848	0.143	pCi/g						
Bismuth-212		0.561	+/-0.246	0.143	+/-0.246	0.303	pCi/g						
Bismuth-214		0.467	+/-0.0843	0.0338	+/-0.0843	0.0712	pCi/g						
Cesium-134	UU1	0.00	+/-0.0421	0.0235	+/-0.0421	0.0495	pCi/g						
Cesium-137		0.292	+/-0.050	0.0179	+/-0.050	0.0379	pCi/g						
Cobalt-60		0.743	+/-0.0722	0.0177	+/-0.0722	0.0386	pCi/g						
Europium-152	U	-0.0383	+/-0.0535	0.0426	+/-0.0535	0.0893	pCi/g						
Europium-154	U	0.0175	+/-0.0552	0.0481	+/-0.0552	0.105	pCi/g						
Europium-155	U	0.0679	+/-0.050	0.0475	+/-0.050	0.098	pCi/g						
Lead-212		0.744	+/-0.0622	0.0253	+/-0.0622	0.0525	pCi/g						
Lead-214		0.632	+/-0.0994	0.0331	+/-0.0994	0.069	pCi/g						
Manganese-54	U	-0.00494	+/-0.0237	0.0193	+/-0.0237	0.0409	pCi/g						
Niobium-94	U	0.0149	+/-0.019	0.0178	+/-0.019	0.0374	pCi/g						
Potassium-40		10.5	+/-0.878	0.149	+/-0.878	0.332	pCi/g						
Radium-226		0.467	+/-0.0843	0.0338	+/-0.0843	0.0712	pCi/g						
Silver-108m	U	-0.0156	+/-0.0165	0.0137	+/-0.0165	0.0288	pCi/g						
Thallium-208		0.239	+/-0.0385	0.0155	+/-0.0385	0.0329	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-004F  
 Sample ID: 162335004

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-004FS  
Sample ID: 162335005  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 24.4%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.904	+/-0.210	0.0771	+/-0.210	0.162	pCi/g		MJH1	05/31/06	1023	528196	1
Americium-241	U	-0.0871	+/-0.147	0.0818	+/-0.147	0.167	pCi/g						
Bismuth-212	U	0.233	+/-0.344	0.161	+/-0.344	0.336	pCi/g						
Bismuth-214		0.577	+/-0.095	0.033	+/-0.095	0.069	pCi/g						
Cesium-134	U	0.0183	+/-0.0318	0.0242	+/-0.0318	0.0505	pCi/g						
Cesium-137		0.314	+/-0.046	0.0197	+/-0.046	0.0412	pCi/g						
Cobalt-60		0.984	+/-0.103	0.019	+/-0.103	0.0409	pCi/g						
Europium-152	U	-0.025	+/-0.0537	0.0467	+/-0.0537	0.0968	pCi/g						
Europium-154	U	-0.0144	+/-0.0724	0.0606	+/-0.0724	0.129	pCi/g						
Europium-155	U	0.0585	+/-0.0663	0.052	+/-0.0663	0.106	pCi/g						
Lead-212		0.872	+/-0.0947	0.0264	+/-0.0947	0.0544	pCi/g						
Lead-214		0.636	+/-0.102	0.0326	+/-0.102	0.0677	pCi/g						
Manganese-54	U	-0.0163	+/-0.0262	0.0211	+/-0.0262	0.0443	pCi/g						
Niobium-94	U	0.0151	+/-0.0212	0.0187	+/-0.0212	0.039	pCi/g						
Potassium-40		12.7	+/-1.23	0.163	+/-1.23	0.356	pCi/g						
Radium-226		0.577	+/-0.095	0.033	+/-0.095	0.069	pCi/g						
Silver-108m	U	0.0178	+/-0.0154	0.0166	+/-0.0154	0.0345	pCi/g						
Thallium-208		0.271	+/-0.0547	0.0184	+/-0.0547	0.0384	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-004FS  
Sample ID: 162335005

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-005F  
Sample ID: 162335006  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 19.4%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid- FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.810	+/-0.183	0.0752	+/-0.183	0.159	pCi/g		MJH1	05/31/06	1023	528196	1
Americium-241	U	0.0234	+/-0.036	0.0312	+/-0.036	0.0638	pCi/g						
Bismuth-212		0.648	+/-0.358	0.164	+/-0.358	0.344	pCi/g						
Bismuth-214		0.637	+/-0.112	0.0383	+/-0.112	0.080	pCi/g						
Cesium-134	UU1	0.00	+/-0.0379	0.0262	+/-0.0379	0.0547	pCi/g						
Cesium-137		0.210	+/-0.0415	0.0214	+/-0.0415	0.0447	pCi/g						
Cobalt-60		0.136	+/-0.0507	0.0187	+/-0.0507	0.0404	pCi/g						
Europium-152	U	-0.0439	+/-0.0596	0.0513	+/-0.0596	0.106	pCi/g						
Europium-154	U	-0.0179	+/-0.0729	0.0616	+/-0.0729	0.131	pCi/g						
Europium-155	U	0.0147	+/-0.0557	0.051	+/-0.0557	0.105	pCi/g						
Lead-212		0.757	+/-0.0591	0.0304	+/-0.0591	0.0627	pCi/g						
Lead-214		0.714	+/-0.0897	0.038	+/-0.0897	0.0788	pCi/g						
Manganese-54	U	0.00687	+/-0.026	0.0227	+/-0.026	0.0476	pCi/g						
Niobium-94	U	-0.0014	+/-0.0222	0.0194	+/-0.0222	0.0406	pCi/g						
Potassium-40		11.2	+/-0.854	0.194	+/-0.854	0.418	pCi/g						
Radium-226		0.637	+/-0.112	0.0383	+/-0.112	0.080	pCi/g						
Silver-108m	U	-0.00275	+/-0.0221	0.0191	+/-0.0221	0.0397	pCi/g						
Thallium-208		0.273	+/-0.0491	0.0204	+/-0.0491	0.0427	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-005F  
 Sample ID: 162335006

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-006F  
Sample ID: 162335007  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 27.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma,Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.808	+/-0.189	0.0619	+/-0.189	0.132	pCi/g		MJH1	05/31/06	1112	528196	1
Americium-241	U	-0.0509	+/-0.111	0.0797	+/-0.111	0.164	pCi/g						
Bismuth-212		0.562	+/-0.324	0.130	+/-0.324	0.276	pCi/g						
Bismuth-214		0.562	+/-0.106	0.0306	+/-0.106	0.0645	pCi/g						
Cesium-134	UU1	0.00	+/-0.0388	0.0232	+/-0.0388	0.0487	pCi/g						
Cesium-137		0.105	+/-0.0477	0.0187	+/-0.0477	0.0393	pCi/g						
Cobalt-60	U	0.0186	+/-0.0229	0.0204	+/-0.0229	0.0441	pCi/g						
Europium-152	U	-0.0255	+/-0.0547	0.043	+/-0.0547	0.0896	pCi/g						
Europium-154	U	0.0125	+/-0.068	0.0575	+/-0.068	0.124	pCi/g						
Europium-155	U	0.0834	+/-0.0936	0.0445	+/-0.0936	0.0917	pCi/g						
Lead-212		0.894	+/-0.0948	0.0256	+/-0.0948	0.0529	pCi/g						
Lead-214		0.686	+/-0.102	0.0313	+/-0.102	0.0652	pCi/g						
Manganese-54	U	0.0168	+/-0.0254	0.0173	+/-0.0254	0.0367	pCi/g						
Niobium-94	U	-0.00862	+/-0.0187	0.0149	+/-0.0187	0.0315	pCi/g						
Potassium-40		14.6	+/-1.33	0.110	+/-1.33	0.252	pCi/g						
Radium-226		0.562	+/-0.106	0.0306	+/-0.106	0.0645	pCi/g						
Silver-108m	U	0.00453	+/-0.0169	0.0146	+/-0.0169	0.0307	pCi/g						
Thallium-208		0.285	+/-0.0542	0.0162	+/-0.0542	0.0342	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-006F  
 Sample ID: 162335007

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-007F  
Sample ID: 162335008  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 10.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.517	+/-0.112	0.0452	+/-0.112	0.0971	pCi/g		MJH1	05/31/06	1149	528196	1
Americium-241	U	0.000336	+/-0.0951	0.0786	+/-0.0951	0.163	pCi/g						
Bismuth-212		0.382	+/-0.238	0.090	+/-0.238	0.193	pCi/g						
Bismuth-214		0.481	+/-0.0661	0.025	+/-0.0661	0.0528	pCi/g						
Cesium-134	U	0.0215	+/-0.0213	0.018	+/-0.0213	0.038	pCi/g						
Cesium-137	U	0.0264	+/-0.0204	0.0141	+/-0.0204	0.0298	pCi/g						
Cobalt-60	U	0.029	+/-0.0355	0.0161	+/-0.0355	0.0347	pCi/g						
Europium-152	U	0.0144	+/-0.0384	0.034	+/-0.0384	0.0712	pCi/g						
Europium-154	U	0.0132	+/-0.0495	0.0434	+/-0.0495	0.0938	pCi/g						
Europium-155	U	0.0317	+/-0.0496	0.0411	+/-0.0496	0.0848	pCi/g						
Lead-212		0.628	+/-0.0457	0.0187	+/-0.0457	0.039	pCi/g						
Lead-214		0.510	+/-0.0692	0.0242	+/-0.0692	0.0508	pCi/g						
Manganese-54	U	-0.00489	+/-0.0168	0.0139	+/-0.0168	0.0296	pCi/g						
Niobium-94	U	0.00332	+/-0.0141	0.0124	+/-0.0141	0.0262	pCi/g						
Potassium-40		9.43	+/-0.672	0.129	+/-0.672	0.283	pCi/g						
Radium-226		0.481	+/-0.0661	0.025	+/-0.0661	0.0528	pCi/g						
Silver-108m	U	0.000625	+/-0.0127	0.0115	+/-0.0127	0.0243	pCi/g						
Thallium-208		0.176	+/-0.0378	0.0115	+/-0.0378	0.0246	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-007F  
 Sample ID: 162335008

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-009F  
Sample ID: 162335009  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 17.9%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.719	+/-0.154	0.0493	+/-0.154	0.105	pCi/g		MJH1	05/31/06	1150	528196	1
Americium-241	U	0.0062	+/-0.0182	0.0173	+/-0.0182	0.0355	pCi/g						
Bismuth-212	U	0.229	+/-0.253	0.114	+/-0.253	0.239	pCi/g						
Bismuth-214		0.434	+/-0.0714	0.0244	+/-0.0714	0.0515	pCi/g						
Cesium-134	UU1	0.00	+/-0.0227	0.0193	+/-0.0227	0.0405	pCi/g						
Cesium-137		0.318	+/-0.0367	0.0145	+/-0.0367	0.0305	pCi/g						
Cobalt-60		0.445	+/-0.0475	0.0139	+/-0.0475	0.0303	pCi/g						
Europium-152	U	0.013	+/-0.0375	0.0335	+/-0.0375	0.0697	pCi/g						
Europium-154	U	0.0143	+/-0.054	0.0469	+/-0.054	0.100	pCi/g						
Europium-155	U	0.0386	+/-0.0411	0.0284	+/-0.0411	0.0585	pCi/g						
Lead-212		0.666	+/-0.0419	0.0209	+/-0.0419	0.0431	pCi/g						
Lead-214		0.507	+/-0.0629	0.0244	+/-0.0629	0.0508	pCi/g						
Manganese-54	U	-0.0112	+/-0.0181	0.0146	+/-0.0181	0.031	pCi/g						
Niobium-94	U	-0.00588	+/-0.0152	0.0128	+/-0.0152	0.0269	pCi/g						
Potassium-40		10.9	+/-0.688	0.133	+/-0.688	0.291	pCi/g						
Radium-226		0.434	+/-0.0714	0.0244	+/-0.0714	0.0515	pCi/g						
Silver-108m	U	-0.00469	+/-0.0128	0.0115	+/-0.0128	0.0241	pCi/g						
Thallium-208		0.196	+/-0.0361	0.0123	+/-0.0361	0.026	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-010F  
Sample ID: 162335010  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 15.8%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.848	+/-0.169	0.0514	+/-0.169	0.103	pCi/g		MJH1	05/31/06	1243	528196	1
Americium-241	U	-0.00399	+/-0.0658	0.0526	+/-0.0658	0.105	pCi/g						
Bismuth-212		0.626	+/-0.223	0.110	+/-0.223	0.219	pCi/g						
Bismuth-214		0.658	+/-0.0977	0.0271	+/-0.0977	0.0542	pCi/g						
Cesium-134	UUI	0.00	+/-0.0242	0.0187	+/-0.0242	0.0374	pCi/g						
Cesium-137		0.204	+/-0.0415	0.0166	+/-0.0415	0.0332	pCi/g						
Cobalt-60		0.228	+/-0.0508	0.0151	+/-0.0508	0.0302	pCi/g						
Europium-152	U	0.0348	+/-0.0545	0.0416	+/-0.0545	0.0831	pCi/g						
Europium-154	U	0.032	+/-0.058	0.0511	+/-0.058	0.102	pCi/g						
Europium-155	U	0.0754	+/-0.0616	0.043	+/-0.0616	0.086	pCi/g						
Lead-212		0.881	+/-0.0859	0.0248	+/-0.0859	0.0497	pCi/g						
Lead-214		0.840	+/-0.100	0.029	+/-0.100	0.058	pCi/g						
Manganese-54	U	-0.00224	+/-0.0189	0.0164	+/-0.0189	0.0329	pCi/g						
Niobium-94	U	0.00778	+/-0.0157	0.0143	+/-0.0157	0.0286	pCi/g						
Potassium-40		12.4	+/-1.01	0.102	+/-1.01	0.203	pCi/g						
Radium-226		0.658	+/-0.0977	0.0271	+/-0.0977	0.0542	pCi/g						
Silver-108m	U	0.00435	+/-0.0158	0.0141	+/-0.0158	0.0282	pCi/g						
Thallium-208		0.267	+/-0.0454	0.015	+/-0.0454	0.030	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

**Notes:**

The Qualifiers in this report are defined as follows :

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- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-010F  
 Sample ID: 162335010

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy---Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID:	9106-0003-010FS	Project:	YANK01204
Sample ID:	162335011	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	25-APR-06		
Receive Date:	05-MAY-06		
Collector:	Client		
Moisture:	15.5%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.731	+/-0.148	0.0534	+/-0.148	0.113	pCi/g		MJH1	05/31/06	1722	528196	1
Americium-241	U	-0.0861	+/-0.0773	0.0637	+/-0.0773	0.131	pCi/g						
Bismuth-212		0.464	+/-0.253	0.116	+/-0.253	0.245	pCi/g						
Bismuth-214		0.736	+/-0.101	0.0282	+/-0.101	0.0589	pCi/g						
Cesium-134	UUI	0.00	+/-0.0312	0.0199	+/-0.0312	0.0416	pCi/g						
Cesium-137		0.169	+/-0.0358	0.0153	+/-0.0358	0.0321	pCi/g						
Cobalt-60	UUI	0.00	+/-0.0404	0.0303	+/-0.0404	0.063	pCi/g						
Europium-152	U	0.00825	+/-0.0439	0.0397	+/-0.0439	0.0823	pCi/g						
Europium-154	U	-0.0128	+/-0.0532	0.0448	+/-0.0532	0.0961	pCi/g						
Europium-155	U	0.0139	+/-0.0539	0.045	+/-0.0539	0.0923	pCi/g						
Lead-212		0.841	+/-0.0842	0.0226	+/-0.0842	0.0467	pCi/g						
Lead-214		0.851	+/-0.102	0.0272	+/-0.102	0.0565	pCi/g						
Manganese-54	U	-0.0134	+/-0.020	0.0165	+/-0.020	0.0348	pCi/g						
Niobium-94	U	0.0167	+/-0.0157	0.0146	+/-0.0157	0.0306	pCi/g						
Potassium-40		11.3	+/-0.982	0.143	+/-0.982	0.310	pCi/g						
Radium-226		0.736	+/-0.101	0.0282	+/-0.101	0.0589	pCi/g						
Silver-108m	U	-0.00529	+/-0.0156	0.0134	+/-0.0156	0.028	pCi/g						
Thallium-208		0.266	+/-0.0396	0.0142	+/-0.0396	0.0298	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-010FS  
 Sample ID: 162335011

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-012F  
Sample ID: 162335012  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 10.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.944	+/-0.128	0.0471	+/-0.128	0.101	pCi/g		MJH1	05/31/06	1723	528196	1
Americium-241	U	-0.108	+/-0.105	0.0811	+/-0.105	0.168	pCi/g						
Bismuth-212		0.686	+/-0.178	0.110	+/-0.178	0.233	pCi/g						
Bismuth-214		0.573	+/-0.0696	0.0259	+/-0.0696	0.0546	pCi/g						
Cesium-134	UUI	0.00	+/-0.0249	0.0192	+/-0.0249	0.0404	pCi/g						
Cesium-137		0.0427	+/-0.0245	0.0126	+/-0.0245	0.0269	pCi/g						
Cobalt-60	U	0.0145	+/-0.0186	0.017	+/-0.0186	0.0367	pCi/g						
Europium-152	U	-0.00296	+/-0.0424	0.0362	+/-0.0424	0.0757	pCi/g						
Europium-154	U	-0.0379	+/-0.0639	0.0431	+/-0.0639	0.0935	pCi/g						
Europium-155	U	0.0158	+/-0.0486	0.0466	+/-0.0486	0.0958	pCi/g						
Lead-212		0.871	+/-0.0541	0.0223	+/-0.0541	0.0462	pCi/g						
Lead-214		0.606	+/-0.0738	0.0284	+/-0.0738	0.0592	pCi/g						
Manganese-54	U	0.0177	+/-0.0179	0.0163	+/-0.0179	0.0344	pCi/g						
Niobium-94	U	-0.000997	+/-0.0157	0.0134	+/-0.0157	0.0283	pCi/g						
Potassium-40		10.3	+/-0.691	0.135	+/-0.691	0.298	pCi/g						
Radium-226		0.573	+/-0.0696	0.0259	+/-0.0696	0.0546	pCi/g						
Silver-108m	U	-0.00211	+/-0.0133	0.0119	+/-0.0133	0.0251	pCi/g						
Thallium-208		0.287	+/-0.036	0.0127	+/-0.036	0.027	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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 2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-012F  
 Sample ID: 162335012

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy—Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-013F  
 Sample ID: 162335013  
 Matrix: Soil  
 Collect Date: 25-APR-06  
 Receive Date: 05-MAY-06  
 Collector: Client  
 Moisture: 35.4%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma,Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.950	+/-0.267	0.0693	+/-0.267	0.150	pCi/g		MJH1	05/31/06	1724	528196	1
Americium-241	U	-0.0155	+/-0.124	0.0897	+/-0.124	0.185	pCi/g						
Bismuth-212		0.769	+/-0.384	0.196	+/-0.384	0.414	pCi/g						
Bismuth-214		0.689	+/-0.128	0.0464	+/-0.128	0.0975	pCi/g						
Cesium-134	U	0.0358	+/-0.0353	0.0295	+/-0.0353	0.0622	pCi/g						
Cesium-137	U	0.0196	+/-0.0262	0.023	+/-0.0262	0.0488	pCi/g						
Cobalt-60	U	0.0241	+/-0.0353	0.0265	+/-0.0353	0.0573	pCi/g						
Europium-152	U	-0.0728	+/-0.0763	0.0585	+/-0.0763	0.122	pCi/g						
Europium-154	U	0.0364	+/-0.0868	0.0759	+/-0.0868	0.164	pCi/g						
Europium-155	U	0.0211	+/-0.0691	0.0597	+/-0.0691	0.123	pCi/g						
Lead-212		1.22	+/-0.0914	0.0359	+/-0.0914	0.0741	pCi/g						
Lead-214		0.763	+/-0.131	0.0439	+/-0.131	0.0915	pCi/g						
Manganese-54	U	-0.00992	+/-0.0283	0.0226	+/-0.0283	0.0482	pCi/g						
Niobium-94	U	0.00629	+/-0.0335	0.0206	+/-0.0335	0.0436	pCi/g						
Potassium-40		19.6	+/-1.23	0.227	+/-1.23	0.499	pCi/g						
Radium-226		0.689	+/-0.128	0.0464	+/-0.128	0.0975	pCi/g						
Silver-108m	U	-0.019	+/-0.0249	0.0189	+/-0.0249	0.0397	pCi/g						
Thallium-208		0.339	+/-0.0682	0.0232	+/-0.0682	0.0489	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-013F  
Sample ID: 162335013

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID:	9106-0003-015F	Project:	YANK01204
Sample ID:	162335014	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	26-APR-06		
Receive Date:	05-MAY-06		
Collector:	Client		
Moisture:	19.9%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.682	+/-0.213	0.0694	+/-0.213	0.147	pCi/g		MJH1	05/31/06	1724	528196	1
Americium-241	U	-0.0444	+/-0.0952	0.076	+/-0.0952	0.156	pCi/g						
Bismuth-212		0.651	+/-0.327	0.143	+/-0.327	0.304	pCi/g						
Bismuth-214		0.446	+/-0.0833	0.0339	+/-0.0833	0.0714	pCi/g						
Cesium-134	U	0.0335	+/-0.0326	0.0241	+/-0.0326	0.0507	pCi/g						
Cesium-137		0.257	+/-0.0479	0.0172	+/-0.0479	0.0365	pCi/g						
Cobalt-60		0.805	+/-0.0828	0.0204	+/-0.0828	0.0442	pCi/g						
Europium-152	U	-0.0503	+/-0.0545	0.0447	+/-0.0545	0.0934	pCi/g						
Europium-154	U	0.00444	+/-0.0697	0.0591	+/-0.0697	0.127	pCi/g						
Europium-155	U	0.0251	+/-0.0558	0.0498	+/-0.0558	0.102	pCi/g						
Lead-212		0.741	+/-0.0638	0.0269	+/-0.0638	0.0556	pCi/g						
Lead-214		0.638	+/-0.0878	0.0329	+/-0.0878	0.0687	pCi/g						
Manganese-54	U	0.00149	+/-0.0272	0.023	+/-0.0272	0.0482	pCi/g						
Niobium-94	U	-0.00431	+/-0.0214	0.0181	+/-0.0214	0.038	pCi/g						
Potassium-40		11.3	+/-0.805	0.141	+/-0.805	0.315	pCi/g						
Radium-226		0.446	+/-0.0833	0.0339	+/-0.0833	0.0714	pCi/g						
Silver-108m	U	-0.00188	+/-0.0197	0.0165	+/-0.0197	0.0346	pCi/g						
Thallium-208		0.246	+/-0.0422	0.020	+/-0.0422	0.042	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-015F Project: YANK01204  
 Sample ID: 162335014 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	-----

- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
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  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID:	9106-0003-016F	Project:	YANK01204
Sample ID:	162335015	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	26-APR-06		
Receive Date:	05-MAY-06		
Collector:	Client		
Moisture:	15.4%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma,Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.485	+/-0.112	0.0433	+/-0.112	0.0936	pCi/g		MJH1	05/31/06	1725	528196	1
Americium-241	U	0.0196	+/-0.0623	0.0518	+/-0.0623	0.107	pCi/g						
Bismuth-212		0.348	+/-0.142	0.115	+/-0.142	0.243	pCi/g						
Bismuth-214		0.403	+/-0.0668	0.0219	+/-0.0668	0.0467	pCi/g						
Cesium-134	UUI	0.00	+/-0.0237	0.0173	+/-0.0237	0.0367	pCi/g						
Cesium-137	U	0.000352	+/-0.0154	0.0133	+/-0.0154	0.0283	pCi/g						
Cobalt-60	U	0.0202	+/-0.020	0.0142	+/-0.020	0.0312	pCi/g						
Europium-152	U	-0.0118	+/-0.0424	0.0314	+/-0.0424	0.0661	pCi/g						
Europium-154	U	0.0276	+/-0.060	0.0374	+/-0.060	0.0822	pCi/g						
Europium-155	U	0.00266	+/-0.037	0.0351	+/-0.037	0.0726	pCi/g						
Lead-212		0.488	+/-0.0437	0.0199	+/-0.0437	0.0414	pCi/g						
Lead-214		0.390	+/-0.0686	0.0231	+/-0.0686	0.0487	pCi/g						
Manganese-54	U	0.00955	+/-0.015	0.0134	+/-0.015	0.0287	pCi/g						
Niobium-94	U	0.0164	+/-0.0146	0.0136	+/-0.0146	0.0287	pCi/g						
Potassium-40		8.00	+/-0.691	0.118	+/-0.691	0.264	pCi/g						
Radium-226		0.403	+/-0.0668	0.0219	+/-0.0668	0.0467	pCi/g						
Silver-108m	U	0.0079	+/-0.0126	0.0109	+/-0.0126	0.023	pCi/g						
Thallium-208		0.170	+/-0.0404	0.0119	+/-0.0404	0.0253	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-016F  
Sample ID: 162335015

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	-----

- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-017F  
Sample ID: 162335016  
Matrix: Soil  
Collect Date: 26-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 18.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		1.25	+/-0.253	0.0616	+/-0.253	0.131	pCi/g		MJH1	05/31/06	1726	528196	1
Americium-241	U	0.0391	+/-0.146	0.0859	+/-0.146	0.176	pCi/g						
Bismuth-212		0.847	+/-0.246	0.131	+/-0.246	0.277	pCi/g						
Bismuth-214		0.880	+/-0.115	0.0333	+/-0.115	0.0697	pCi/g						
Cesium-134	UU1	0.00	+/-0.0443	0.0252	+/-0.0443	0.0525	pCi/g						
Cesium-137	UU1	0.00	+/-0.0357	0.0203	+/-0.0357	0.0424	pCi/g						
Cobalt-60	U	0.0208	+/-0.0239	0.0217	+/-0.0239	0.0464	pCi/g						
Europium-152	U	-0.0194	+/-0.053	0.0462	+/-0.053	0.0958	pCi/g						
Europium-154	U	0.00332	+/-0.0714	0.0609	+/-0.0714	0.130	pCi/g						
Europium-155	U	0.069	+/-0.0628	0.0529	+/-0.0628	0.108	pCi/g						
Lead-212		1.24	+/-0.122	0.0279	+/-0.122	0.0573	pCi/g						
Lead-214		1.02	+/-0.130	0.0335	+/-0.130	0.0694	pCi/g						
Manganese-54	U	0.00696	+/-0.0258	0.0191	+/-0.0258	0.0404	pCi/g						
Niobium-94	U	0.00448	+/-0.0306	0.0178	+/-0.0306	0.0372	pCi/g						
Potassium-40		13.2	+/-1.27	0.163	+/-1.27	0.356	pCi/g						
Radium-226		0.880	+/-0.115	0.0333	+/-0.115	0.0697	pCi/g						
Silver-108m	U	-0.00197	+/-0.0175	0.0152	+/-0.0175	0.0317	pCi/g						
Thallium-208		0.413	+/-0.0528	0.0186	+/-0.0528	0.0389	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-017F  
Sample ID: 162335016

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	-----

- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy—Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-018F  
 Sample ID: 162335017  
 Matrix: Soil  
 Collect Date: 26-APR-06  
 Receive Date: 05-MAY-06  
 Collector: Client  
 Moisture: 19.6%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.397	+/-0.164	0.0734	+/-0.164	0.154	pCi/g		MJH1	05/31/06	1727	528196	1
Americium-241	U	0.000262	+/-0.0286	0.0275	+/-0.0286	0.0564	pCi/g						
Bismuth-212	U	0.309	+/-0.280	0.158	+/-0.280	0.330	pCi/g						
Bismuth-214		0.360	+/-0.081	0.0367	+/-0.081	0.0766	pCi/g						
Cesium-134	U	0.0232	+/-0.0253	0.0233	+/-0.0253	0.0487	pCi/g						
Cesium-137		0.190	+/-0.0405	0.0196	+/-0.0405	0.0411	pCi/g						
Cobalt-60		0.185	+/-0.0516	0.0201	+/-0.0516	0.043	pCi/g						
Europium-152	U	-0.00454	+/-0.0526	0.047	+/-0.0526	0.0976	pCi/g						
Europium-154	U	0.0156	+/-0.0628	0.0554	+/-0.0628	0.118	pCi/g						
Europium-155	U	0.0431	+/-0.0437	0.0435	+/-0.0437	0.0893	pCi/g						
Lead-212		0.516	+/-0.0495	0.0279	+/-0.0495	0.0574	pCi/g						
Lead-214		0.420	+/-0.0794	0.035	+/-0.0794	0.0725	pCi/g						
Manganese-54	U	6.390E-06	+/-0.0235	0.0204	+/-0.0235	0.0429	pCi/g						
Niobium-94	U	0.00578	+/-0.0201	0.018	+/-0.0201	0.0377	pCi/g						
Potassium-40		9.25	+/-0.728	0.167	+/-0.728	0.362	pCi/g						
Radium-226		0.360	+/-0.081	0.0367	+/-0.081	0.0766	pCi/g						
Silver-108m	U	0.0022	+/-0.0189	0.0167	+/-0.0189	0.0348	pCi/g						
Thallium-208		0.133	+/-0.0506	0.0203	+/-0.0506	0.0424	pCi/g						

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
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# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-018F  
Sample ID: 162335017

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	-----

- A The TIC is a suspected aldol-condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-008F  
Sample ID: 162335018  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 15%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.00731	+/-0.0284	0.00	+/-0.0284	0.0777	pCi/g		LCW1	05/18/06	1606	530940	1
Curium-242	U	0.0241	+/-0.0639	0.0361	+/-0.064	0.158	pCi/g						
Curium-243/244	U	0.00	+/-0.0563	0.00	+/-0.0563	0.0778	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0741	+/-0.155	0.193	+/-0.155	0.467	pCi/g		LCW1	05/18/06	1605	530942	2
Plutonium-239/240	U	-0.00243	+/-0.133	0.143	+/-0.133	0.367	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241		54.2	+/-15.0	11.0	+/-15.9	22.6	pCi/g		LCW1	06/03/06	0928	530943	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>													
Actinium-228		0.615	+/-0.163	0.0558	+/-0.163	0.120	pCi/g		MJH1	05/31/06	1727	528196	4
Americium-241	U	-0.00706	+/-0.0254	0.0245	+/-0.0254	0.0503	pCi/g						
Bismuth-212		0.528	+/-0.246	0.144	+/-0.246	0.306	pCi/g						
Bismuth-214		0.501	+/-0.095	0.0294	+/-0.095	0.0624	pCi/g						
Cesium-134	U	0.0293	+/-0.0241	0.0224	+/-0.0241	0.0473	pCi/g						
Cesium-137		0.246	+/-0.0396	0.0178	+/-0.0396	0.0377	pCi/g						
Cobalt-60		0.109	+/-0.0365	0.0172	+/-0.0365	0.0377	pCi/g						
Europium-152	U	0.00648	+/-0.0436	0.0405	+/-0.0436	0.0847	pCi/g						
Europium-154	U	0.0147	+/-0.0577	0.0508	+/-0.0577	0.110	pCi/g						
Europium-155	UUI	0.00	+/-0.0588	0.0358	+/-0.0588	0.0739	pCi/g						
Lead-212		0.470	+/-0.047	0.0218	+/-0.047	0.0453	pCi/g						
Lead-214		0.460	+/-0.0751	0.0294	+/-0.0751	0.0615	pCi/g						
Manganese-54	U	-0.00378	+/-0.0226	0.0189	+/-0.0226	0.0402	pCi/g						
Niobium-94	U	-0.00262	+/-0.0191	0.0163	+/-0.0191	0.0345	pCi/g						
Potassium-40		9.51	+/-0.714	0.143	+/-0.714	0.319	pCi/g						
Radium-226		0.501	+/-0.095	0.0294	+/-0.095	0.0624	pCi/g						
Silver-108m	U	-0.012	+/-0.0156	0.0134	+/-0.0156	0.0284	pCi/g						
Thallium-208		0.204	+/-0.0408	0.0165	+/-0.0408	0.0349	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00669	+/-0.00923	0.00862	+/-0.00923	0.0179	pCi/g		BXF1	06/06/06	2314	535512	5
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	5.45	+/-6.31	5.08	+/-6.31	10.6	pCi/g		NXP1	05/28/06	0219	531705	7
<i>Liquid Scint C14, Solid All, FSS</i>													

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-008F  
Sample ID: 162335018

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.0788	+/-0.115	0.0953	+/-0.115	0.194	pCi/g		ATH2	06/05/06	1937	534837	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-15.8	+/-16.9	13.2	+/-17.0	27.8	pCi/g		AF1	06/05/06	1553	535483	10
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	0.0786	+/-2.26	1.89	+/-2.26	3.93	pCi/g		SLN1	05/30/06	1451	527978	12
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.0613	+/-0.256	0.217	+/-0.256	0.445	pCi/g		SXE1	05/31/06	0914	531704	13

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	05/08/06	0826	527706
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EML HASL 300, 4.5.2.3
5	EPA 905.0 Modified
6	EPA 905.0 Modified
7	EPA 906.0 Modified
8	EPA EERF C-01 Modified
9	EPA EERF C-01 Modified
10	DOE RESL Fe-1, Modified
11	DOE RESL Fe-1, Modified
12	DOE RESL Ni-1, Modified
13	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	106	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	91	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	94	(25%-125%)



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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-014F  
Sample ID: 162335019  
Matrix: Soil  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 16%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
<b>Rad Alpha Spec Analysis</b>												
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>												
Americium-241	U	0.0626	+/-0.101	0.00	+/-0.102	0.115	pCi/g		LCW1	05/18/06	1606 530940	1
Curium-242	U	0.047	+/-0.0921	0.00	+/-0.0924	0.127	pCi/g					
Curium-243/244	U	0.00	+/-0.0834	0.00	+/-0.0834	0.115	pCi/g					
<i>Alphaspec Pu, Solid-ALL FSS</i>												
Plutonium-238	U	-0.0512	+/-0.167	0.197	+/-0.168	0.476	pCi/g		LCW1	05/18/06	1605 530942	2
Plutonium-239/240	U	-0.0658	+/-0.043	0.104	+/-0.0437	0.291	pCi/g					
<i>Liquid Scint Pu241, Solid-ALL FSS</i>												
Plutonium-241	U	19.0	+/-13.1	10.4	+/-13.2	21.5	pCi/g		LCW1	06/03/06	0959 530943	3
<b>Rad Gamma Spec Analysis</b>												
<i>Gamma, Solid-FSS GAM &amp; ALL FSS</i>												
Actinium-228		0.885	+/-0.165	0.0474	+/-0.165	0.0994	pCi/g		MJH1	05/31/06	1728 528196	4
Americium-241	U	0.00545	+/-0.0921	0.0757	+/-0.0921	0.156	pCi/g					
Bismuth-212		0.476	+/-0.227	0.107	+/-0.227	0.223	pCi/g					
Bismuth-214		0.559	+/-0.0801	0.0249	+/-0.0801	0.0518	pCi/g					
Cesium-134	UUI	0.00	+/-0.0239	0.0171	+/-0.0239	0.0356	pCi/g					
Cesium-137		0.291	+/-0.0402	0.0132	+/-0.0402	0.0275	pCi/g					
Cobalt-60		0.433	+/-0.0574	0.0112	+/-0.0574	0.0242	pCi/g					
Europium-152	U	-0.0381	+/-0.0372	0.0325	+/-0.0372	0.0675	pCi/g					
Europium-154	U	-0.0112	+/-0.0452	0.037	+/-0.0452	0.0787	pCi/g					
Europium-155	U	0.080	+/-0.0686	0.0431	+/-0.0686	0.0885	pCi/g					
Lead-212		0.927	+/-0.0855	0.0203	+/-0.0855	0.042	pCi/g					
Lead-214		0.733	+/-0.0906	0.0247	+/-0.0906	0.0512	pCi/g					
Manganese-54	UUI	0.00	+/-0.0409	0.013	+/-0.0409	0.0272	pCi/g					
Niobium-94	U	0.0126	+/-0.0136	0.0118	+/-0.0136	0.0246	pCi/g					
Potassium-40		15.3	+/-1.40	0.101	+/-1.40	0.218	pCi/g					
Radium-226		0.559	+/-0.0801	0.0249	+/-0.0801	0.0518	pCi/g					
Silver-108m	U	-0.00262	+/-0.013	0.0115	+/-0.013	0.024	pCi/g					
Thallium-208		0.333	+/-0.0443	0.0119	+/-0.0443	0.025	pCi/g					
<b>Rad Gas Flow Proportional Counting</b>												
<i>GFPC, Sr90, solid-ALL FSS</i>												
Strontium-90	U	-0.000963	+/-0.0092	0.00897	+/-0.0092	0.0187	pCi/g		BXF1	06/06/06	2315 535512	5
<b>Rad Liquid Scintillation Analysis</b>												
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>												
Tritium	U	9.53	+/-7.00	5.52	+/-7.00	11.5	pCi/g		NXP1	05/28/06	0251 531705	7
<i>Liquid Scint C14, Solid All, FSS</i>												

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-014F  
Sample ID: 162335019

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.0228	+/-0.110	0.0919	+/-0.110	0.187	pCi/g		ATH2	06/05/06	2038	534837	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	1.69	+/-16.2	12.1	+/-16.2	25.3	pCi/g		AF1	06/05/06	1610	535483	10
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-0.34	+/-2.43	2.05	+/-2.43	4.25	pCi/g		SLN1	05/30/06	1507	527978	12
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.179	+/-0.268	0.219	+/-0.268	0.453	pCi/g		SXE1	05/30/06	2109	531704	13

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	05/08/06	0826	527706
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	05/07/06	1536	527705

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EML HASL 300, 4.5.2.3
5	EPA 905.0 Modified
6	EPA 905.0 Modified
7	EPA 906.0 Modified
8	EPA EERF C-01 Modified
9	EPA EERF C-01 Modified
10	DOE RESL Fe-1, Modified
11	DOE RESL Fe-1, Modified
12	DOE RESL Ni-1, Modified
13	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	66	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	95	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	101	(25%-125%)

**GENERAL ENGINEERING LABORATORIES, LLC**  
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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: June 7, 2006

Client Sample ID: 9106-0003-014F Project: YANK01204  
 Sample ID: 162335019 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			60		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Fe55, Solid-ALL FS			86		(15%-125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			83		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			69		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldo- condensation product
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# QUALITY CONTROL DATA

**GENERAL ENGINEERING LABORATORIES, LLC**  
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**QC Summary**

Report Date: June 7, 2006  
 Page 1 of 9

**Client :** Connecticut Yankee Atomic Power  
 362 Injun Hollow Rd  
  
 East Hampton, Connecticut  
**Contact:** Mr. Jack McCarthy  
**Workorder:** 162335

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 530940											
QC1201095114 162335018 DUP											
Americium-241		U	0.00731	U	0.0412	pCi/g	140	(0% - 100%)	LCW1	05/18/06	16:06
		Uncert:	+/-0.0284		+/-0.144						
		TPU:	+/-0.0284		+/-0.144						
Curium-242		U	0.0241	U	0.00	pCi/g	0	(0% - 100%)			
		Uncert:	+/-0.0639		+/-0.179						
		TPU:	+/-0.064		+/-0.179						
Curium-243/244		U	0.00	U	-0.0198	pCi/g	200	(0% - 100%)			
		Uncert:	+/-0.0563		+/-0.0389						
		TPU:	+/-0.0563		+/-0.039						
QC1201095116 LCS											
Americium-241			12.7		11.5	pCi/g		91 (75%-125%)			
		Uncert:			+/-1.12						
		TPU:			+/-1.97						
Curium-242				U	0.00	pCi/g					
		Uncert:			+/-0.0559						
		TPU:			+/-0.0559						
Curium-243/244			15.5		13.4	pCi/g		85 (75%-125%)			
		Uncert:			+/-1.21						
		TPU:			+/-2.24						
QC1201095113 MB											
Americium-241				U	-0.0214	pCi/g					
		Uncert:			+/-0.0615						
		TPU:			+/-0.0617						
Curium-242				U	-0.00758	pCi/g					
		Uncert:			+/-0.0149						
		TPU:			+/-0.0149						
Curium-243/244				U	-0.00753	pCi/g					
		Uncert:			+/-0.0148						
		TPU:			+/-0.0148						
QC1201095115 162335018 MS											
Americium-241		U	0.00731		11.9	pCi/g		90 (75%-125%)			
		Uncert:	+/-0.0284		+/-1.21						
		TPU:	+/-0.0284		+/-2.09						
Curium-242		U	0.0241	U	0.00	pCi/g					
		Uncert:	+/-0.0639		+/-0.0689						
		TPU:	+/-0.064		+/-0.0689						
Curium-243/244		U	0.00		15.5	pCi/g		95 (75%-125%)			
		Uncert:	+/-0.0563		+/-1.38						
		TPU:	+/-0.0563		+/-2.61						
Batch 530942											
QC1201095122 162335018 DUP											
Plutonium-238		U	-0.0741	U	-0.0202	pCi/g	114	(0% - 100%)	LCW1	05/18/06	16:14

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## QC Summary

Workorder: 162335

Page 2 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	530942										
Plutonium-239/240		Uncert:		+/-0.155							
		TPU:		+/-0.155							
	U		U	-0.00243	0.0157	pCi/g	273	(0% - 100%)			
		Uncert:		+/-0.133	+/-0.0841						
		TPU:		+/-0.133	+/-0.0842						
QC1201095124	LCS				0.128	pCi/g		(75%-125%)			
Plutonium-238		Uncert:			+/-0.125						
		TPU:			+/-0.126						
Plutonium-239/240	11.7				11.8	pCi/g	101	(75%-125%)			
		Uncert:			+/-1.21						
		TPU:			+/-1.72						
QC1201095121	MB										
Plutonium-238			U	-0.0523		pCi/g				05/18/06	16:05
		Uncert:			+/-0.0953						
		TPU:			+/-0.0955						
Plutonium-239/240			U	-0.0933		pCi/g					
		Uncert:			+/-0.101						
		TPU:			+/-0.101						
QC1201095123	162335018	MS									
Plutonium-238		U	U	-0.0741	0.070	pCi/g		(75%-125%)		05/18/06	16:14
		Uncert:			+/-0.155						
		TPU:			+/-0.155						
Plutonium-239/240	12.3	U		-0.00243	10.5	pCi/g	85	(75%-125%)			
		Uncert:			+/-0.133						
		TPU:			+/-0.133						
Batch	530943										
QC1201095126	162335018	DUP									
Plutonium-241				54.2	36.3	pCi/g	40	(0% - 100%)	LCW1	06/03/06	11:01
		Uncert:			+/-15.0						
		TPU:			+/-15.9						
QC1201095128	LCS										
Plutonium-241		330			303	pCi/g	92	(75%-125%)		06/03/06	12:04
		Uncert:			+/-22.1						
		TPU:			+/-37.4						
QC1201095125	MB										
Plutonium-241			U		14.0	pCi/g				06/03/06	10:30
		Uncert:			+/-13.6						
		TPU:			+/-13.6						
QC1201095127	162335018	MS									
Plutonium-241		331		54.2	320	pCi/g	80	(75%-125%)		06/03/06	11:32
		Uncert:			+/-15.0						
		TPU:			+/-15.9						
<b>Rad Gamma Spec</b>											
Batch	528196										
QC1201088600	162335001	DUP									
Actinium-228				0.640	0.681	pCi/g	6	(0% - 100%)	MJH1	05/31/06	17:31
		Uncert:			+/-0.149						
					+/-0.118						
					+/-0.118						

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## QC Summary

Workorder: 162335

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	528196										
Americium-241		TPU:	+/-0.149								
	U		0.00555	U	-0.00939	pCi/g	779	(0% - 100%)			
		Uncert:	+/-0.0707		+/-0.0817						
Bismuth-212		TPU:	+/-0.0707		+/-0.0817						
			0.351		0.356	pCi/g	1	(0% - 100%)			
		Uncert:	+/-0.281		+/-0.181						
Bismuth-214		TPU:	+/-0.281		+/-0.181						
			0.462		0.418	pCi/g	10	(0% - 100%)			
		Uncert:	+/-0.0847		+/-0.066						
Cesium-134		TPU:	+/-0.0847		+/-0.066						
	U		0.00674	U	0.00496	pCi/g	30	(0% - 100%)			
		Uncert:	+/-0.0184		+/-0.0191						
Cesium-137		TPU:	+/-0.0184		+/-0.0191						
			0.128		0.131	pCi/g	3	(0% - 100%)			
		Uncert:	+/-0.0361		+/-0.0298						
Cobalt-60		TPU:	+/-0.0361		+/-0.0298						
			0.107		0.108	pCi/g	1	(0% - 100%)			
		Uncert:	+/-0.0311		+/-0.0327						
Europium-152		TPU:	+/-0.0311		+/-0.0327						
	U		0.00641	U	-0.00259	pCi/g	471	(0% - 100%)			
		Uncert:	+/-0.043		+/-0.0383						
Europium-154		TPU:	+/-0.043		+/-0.0383						
	U		-0.015	U	0.00694	pCi/g	544	(0% - 100%)			
		Uncert:	+/-0.0505		+/-0.0476						
Europium-155		TPU:	+/-0.0505		+/-0.0476						
	U		0.0713	U	0.033	pCi/g	74	(0% - 100%)			
		Uncert:	+/-0.0618		+/-0.0524						
Lead-212		TPU:	+/-0.0618		+/-0.0524						
			0.670		0.640	pCi/g	5	(0% - 20%)			
		Uncert:	+/-0.0714		+/-0.048						
Lead-214		TPU:	+/-0.0714		+/-0.048						
			0.562		0.561	pCi/g	0	(0% - 20%)			
		Uncert:	+/-0.0771		+/-0.0698						
Manganese-54		TPU:	+/-0.0771		+/-0.0698						
	U		-0.0119	U	0.00582	pCi/g	584	(0% - 100%)			
		Uncert:	+/-0.0207		+/-0.0176						
Niobium-94		TPU:	+/-0.0207		+/-0.0176						
	U		0.0123	U	0.00253	pCi/g	132	(0% - 100%)			
		Uncert:	+/-0.0151		+/-0.0135						
Potassium-40		TPU:	+/-0.0151		+/-0.0135						
			10.9		10.5	pCi/g	4	(0% - 20%)			
		Uncert:	+/-0.996		+/-0.705						
Radium-226		TPU:	+/-0.996		+/-0.705						
			0.462		0.418	pCi/g	10	(0% - 100%)			
		Uncert:	+/-0.0847		+/-0.066						
Silver-108m		TPU:	+/-0.0847		+/-0.066						
	U		0.0049	U	-0.001	pCi/g	303	(0% - 100%)			
		Uncert:	+/-0.0138		+/-0.0125						

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**QC Summary**

Workorder: 162335

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	528196										
Thallium-208		TPU:	+/-0.0138	+/-0.0125							
			0.229	0.214	pCi/g	7		(0% - 100%)			
		Uncert:	+/-0.0399	+/-0.0444							
		TPU:	+/-0.0399	+/-0.0444							
QC1201088601	LCS										
Actinium-228				U	0.109	pCi/g				05/31/06	17:32
		Uncert:			+/-0.571						
Americium-241	23.4	TPU:			+/-0.571	pCi/g	90	(75%-125%)			
		Uncert:			+/-2.42						
		TPU:			+/-2.42						
Bismuth-212				U	-0.0642	pCi/g					
		Uncert:			+/-1.13						
		TPU:			+/-1.13						
Bismuth-214				U	0.196	pCi/g					
		Uncert:			+/-0.247						
		TPU:			+/-0.247						
Cesium-134				U	-0.013	pCi/g					
		Uncert:			+/-0.147						
		TPU:			+/-0.147						
Cesium-137	9.65				10.2	pCi/g	105	(75%-125%)			
		Uncert:			+/-0.895						
		TPU:			+/-0.895						
Cobalt-60	15.1				15.8	pCi/g	104	(75%-125%)			
		Uncert:			+/-1.18						
		TPU:			+/-1.18						
Europium-152				U	-0.084	pCi/g					
		Uncert:			+/-0.302						
		TPU:			+/-0.302						
Europium-154				U	0.416	pCi/g					
		Uncert:			+/-0.330						
		TPU:			+/-0.330						
Europium-155				U	-0.213	pCi/g					
		Uncert:			+/-0.356						
		TPU:			+/-0.356						
Lead-212				U	0.105	pCi/g					
		Uncert:			+/-0.180						
		TPU:			+/-0.180						
Lead-214				U	0.00264	pCi/g					
		Uncert:			+/-0.222						
		TPU:			+/-0.222						
Manganese-54				U	-0.0501	pCi/g					
		Uncert:			+/-0.138						
		TPU:			+/-0.138						
Niobium-94				U	0.0389	pCi/g					
		Uncert:			+/-0.131						
		TPU:			+/-0.131						
Potassium-40				U	1.82	pCi/g					

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## QC Summary

Workorder: 162335

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
<b>Rad Gamma Spec</b>									
Batch	528196								
Radium-226		U	0.196	pCi/g			(75%-125%)		
	Uncert:		+/-1.28						
	TPU:		+/-1.28						
Silver-108m		U	-0.0876	pCi/g					
	Uncert:		+/-0.247						
	TPU:		+/-0.247						
Thallium-208		U	0.0613	pCi/g					
	Uncert:		+/-0.113						
	TPU:		+/-0.113						
QC1201088599 MB									
Actinium-228		U	0.0748	pCi/g					06/02/06 09:20
	Uncert:		+/-0.0533						
	TPU:		+/-0.0533						
Americium-241		U	-0.0415	pCi/g					
	Uncert:		+/-0.0619						
	TPU:		+/-0.0619						
Bismuth-212		U	0.0557	pCi/g					
	Uncert:		+/-0.0788						
	TPU:		+/-0.0788						
Bismuth-214		UUI	0.00	pCi/g					
	Uncert:		+/-0.0342						
	TPU:		+/-0.0342						
Cesium-134		U	0.00114	pCi/g					
	Uncert:		+/-0.00936						
	TPU:		+/-0.00936						
Cesium-137		U	0.00771	pCi/g					
	Uncert:		+/-0.0187						
	TPU:		+/-0.0187						
Cobalt-60		U	0.0159	pCi/g					
	Uncert:		+/-0.0128						
	TPU:		+/-0.0128						
Europium-152		U	0.00686	pCi/g					
	Uncert:		+/-0.0288						
	TPU:		+/-0.0288						
Europium-154		U	-0.0183	pCi/g					
	Uncert:		+/-0.0274						
	TPU:		+/-0.0274						
Europium-155		U	-0.00693	pCi/g					
	Uncert:		+/-0.0229						
	TPU:		+/-0.0229						
Lead-212		U	0.00357	pCi/g					
	Uncert:		+/-0.0163						
	TPU:		+/-0.0163						
Lead-214		U	0.00987	pCi/g					
	Uncert:		+/-0.0198						
	TPU:		+/-0.0198						

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## QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>										
Batch	528196									
Manganese-54		U	0.00383	pCi/g						
	Uncert:		+/-0.00944							
	TPU:		+/-0.00944							
Niobium-94		U	-0.00371	pCi/g						
	Uncert:		+/-0.00901							
	TPU:		+/-0.00901							
Potassium-40		U	0.0777	pCi/g						
	Uncert:		+/-0.178							
	TPU:		+/-0.178							
Radium-226		UUI	0.00	pCi/g						
	Uncert:		+/-0.0342							
	TPU:		+/-0.0342							
Silver-108m		U	0.000939	pCi/g						
	Uncert:		+/-0.00928							
	TPU:		+/-0.00928							
Thallium-208		U	0.0147	pCi/g						
	Uncert:		+/-0.0161							
	TPU:		+/-0.0161							
<b>Rad Gas Flow</b>										
Batch	535512									
QC1201105910	162335018 DUP									
Strontium-90		U	0.00669	U	0.012	pCi/g	0	(0% - 100%) BXF1	06/06/06	23:16
	Uncert:		+/-0.00923		+/-0.00902					
	TPU:		+/-0.00923		+/-0.00902					
QC1201105912	LCS									
Strontium-90	1.43				1.19	pCi/g	83	(75%-125%)	06/07/06	10:08
	Uncert:				+/-0.081					
	TPU:				+/-0.0854					
QC1201105909	MB									
Strontium-90				U	0.0107	pCi/g			06/06/06	23:16
	Uncert:				+/-0.00663					
	TPU:				+/-0.00664					
QC1201105911	162335018 MS									
Strontium-90	1.54	U	0.00669		1.54	pCi/g	100	(75%-125%)	06/07/06	10:08
	Uncert:		+/-0.00923		+/-0.107					
	TPU:		+/-0.00923		+/-0.115					
<b>Rad Liquid Scintillation</b>										
Batch	527978									
QC1201088148	162335018 DUP									
Nickel-63		U	0.0786	U	-2.09	pCi/g	0	(0% - 100%) SLN1	05/30/06	15:39
	Uncert:		+/-2.26		+/-2.31					
	TPU:		+/-2.26		+/-2.31					
QC1201088150	LCS									
Nickel-63	129				119	pCi/g	92	(75%-125%)	05/30/06	16:12
	Uncert:				+/-5.38					
	TPU:				+/-6.06					
QC1201088147	MB									
Nickel-63				U	-1.23	pCi/g			05/30/06	15:23

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>										
Batch	527978									
			Uncert:							+/-2.03
			TPU:							+/-2.03
QC1201088149	162335018	MS								
Nickel-63		134 U	0.0786		122	pCi/g	91 (75%-125%)		05/30/06	15:55
			Uncert:	+/-2.26	+/-5.70					
			TPU:	+/-2.26	+/-6.37					
Batch	531704									
QC1201096868	162583001	DUP								
Technetium-99		U	0.161 U		0.239	pCi/g	0 (0% - 100%)	SXE1	05/31/06	00:27
			Uncert:	+/-0.254	+/-0.273					
			TPU:	+/-0.255	+/-0.273					
QC1201096870	LCS									
Technetium-99			12.5		11.1	pCi/g	89 (75%-125%)		05/31/06	01:00
			Uncert:		+/-0.474					
			TPU:		+/-0.545					
QC1201096867	MB									
Technetium-99				U	0.163	pCi/g			05/31/06	00:11
			Uncert:		+/-0.214					
			TPU:		+/-0.214					
QC1201096869	162583001	MS								
Technetium-99		13.1 U	0.161		11.6	pCi/g	89 (75%-125%)		05/31/06	00:44
			Uncert:	+/-0.254	+/-0.583					
			TPU:	+/-0.255	+/-0.649					
Batch	531705									
QC1201096878	162583001	DUP								
Tritium		U	1.17 U		6.01	pCi/g	0 (0% - 100%)	NXPI	05/28/06	09:10
			Uncert:	+/-4.09	+/-4.70					
			TPU:	+/-4.09	+/-4.70					
QC1201096880	LCS									
Tritium			41.4		44.8	pCi/g	108 (75%-125%)		05/28/06	10:14
			Uncert:		+/-5.68					
			TPU:		+/-5.73					
QC1201096877	MB									
Tritium				U	0.0641	pCi/g			06/03/06	05:11
			Uncert:		+/-0.533					
			TPU:		+/-0.533					
QC1201096879	162583001	MS								
Tritium		45.7 U	1.17		52.3	pCi/g	114 (75%-125%)		05/28/06	09:42
			Uncert:	+/-4.09	+/-6.44					
			TPU:	+/-4.09	+/-6.50					
Batch	534837									
QC1201104385	162335019	DUP								
Carbon-14		U	0.0228 U		0.0418	pCi/g	0 (0% - 100%)	ATH2	06/05/06	22:40
			Uncert:	+/-0.110	+/-0.121					
			TPU:	+/-0.110	+/-0.121					
QC1201104387	LCS									
Carbon-14			6.66		6.52	pCi/g	98 (75%-125%)		06/04/06	08:22
			Uncert:		+/-0.238					
			TPU:		+/-0.259					

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## QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
<b>Rad Liquid Scintillation</b>									
Batch 534837									
QC1201104384	MB								
Carbon-14		U	0.0371	pCi/g					06/04/06 06:04
			Uncert: +/-0.125						
			TPU: +/-0.125						
QC1201104386	162335019 MS								
Carbon-14		7.13 U	0.0228	7.04	pCi/g	99	(75%-125%)		06/04/06 07:36
			Uncert: +/-0.110	+/-0.249					
			TPU: +/-0.110	+/-0.272					
Batch 535483									
QC1201105873	162335018 DUP								
Iron-55		U	-15.8	U	0.079	pCi/g	0	(0% - 100%)	AF1 06/05/06 17:00
			Uncert: +/-16.9	+/-20.4					
			TPU: +/-17.0	+/-20.4					
QC1201105875	LCS								
Iron-55		485		492	pCi/g	101	(75%-125%)		06/05/06 17:33
			Uncert: +/-39.7						
			TPU: +/-61.9						
QC1201105872	MB								
Iron-55			U	5.04	pCi/g				06/05/06 16:43
			Uncert: +/-22.8						
			TPU: +/-22.8						
QC1201105874	162335018 MS								
Iron-55		655 U	-15.8	628	pCi/g	96	(75%-125%)		06/05/06 17:16
			Uncert: +/-16.9	+/-39.8					
			TPU: +/-17.0	+/-71.2					

**Notes:**

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
Preparation or preservation holding time was exceeded

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## QC Summary

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<u>Parmname</u>	<u>NOM</u>	<u>Sample Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
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h

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

# **General Narrative**

**CASE NARRATIVE**  
**For**  
**CONNECTICUT YANKEE**  
**RE: Soil**  
**PO# 002332**

**Work Order: 168404**

**SDG: MSR #06-0652, 06-0675, 06-0687, 06-0688, 06-0707, 06-0743, 06-0755**

**August 15, 2006**

**Laboratory Identification:**

General Engineering Laboratories, LLC

**Mailing Address:**

P.O. Box 30712  
Charleston, South Carolina 29417

**Express Mail Delivery and Shipping Address:**

2040 Savage Road  
Charleston, South Carolina 29407

**Telephone Number:**

(843) 556-8171

**Summary:**

**Sample receipt**

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on May 5, May 9, May 12, May 17, May 26, June 2, June 8, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<b><u>Sample ID</u></b>	<b><u>Client Sample ID</u></b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F

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168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F

**Items of Note:**

At the request of Dale Randall on July 20, 2006, GEL analyzed the above samples according to the spreadsheet in the attached email.

**Case Narrative:**

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

**Analytical Request:**

Seven soil samples were reanalyzed for FSSALL, except gamma and Sr-90.  
Four soil samples were reanalyzed for FSSALL, except gamma and Ni-63.  
Two soil samples were reanalyzed for FSSALL, except gamma.  
Two soil samples were reanalyzed for FSALL, except gamma, Sr-90 and Ni-63.

**Internal Chain of Custody:**

Custody was maintained for the sample(s).

**Data Package:**

The enclosed data package contains the following sections: Case Narrative, Chain of Custody and Supporting Documentation and all analytical fractions.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



Cheryl Jones  
Project Manager

1684041

**Subject:** Additional HTD analyses

**From:** "Dale Randall" <randall@cyapco.com>

**Date:** Thu, 20 Jul 2006 11:04:54 -0400

**To:** "Cheryl Jones" <cj@gel.com>

**CC:** "Clyde Newson" <Newson@CYAPCO.com>, "John McCarthy" <McCarthy@CYAPCO.com>

Cheryl:

Per our earlier discussion, attached is a list of samples that we would like to have analyzed to the FSSALL protocol. I have included a list of test protocols performed on each sample to date. Once you have had an opportunity to determine our options for each sample please call or e-mail me at your convenience.

Thank You,

Dale

(860) 267-3133

**GEL FSSALL analyses request.xls**

**Content-Description:** GEL FSSALL analyses request.xls

**Content-Type:** application/vnd.ms-excel

**Content-Encoding:** base64

To be done

Done

Previous GEL ID	CY sample location IDs	Done					To be done									
		FSS Gam	Sr-90	Ni-63	Am	Pu	Sr90	Pu241	Fe55	Ni63	Tc99	H3	C14			
164220008	9106-0002-007F	X	X		X	X					X	X	X	X	X	X
164220012	9106-0002-011F	X	X		X	X					X	X	X	X	X	X
162335004	9106-0003-004F	X			X	X					X	X	X	X	X	X
162335014	9106-0003-015F	X			X	X					X	X	X	X	X	X
162832015	9106-0004-005F	X	X		X	X					X	X	X	X	X	X
162832009	9106-0004-015F	X	X		X	X					X	X	X	X	X	X
162485008	9106-0005-010F	X	X		X	X					X	X	X	X	X	X
162485011	9106-0005-014F	X	X		X	X					X	X	X	X	X	X
162850014	9106-0006-005F	X	X		X	X					X	X	X	X	X	X
163741005	9106-0008-006F	X	X		X	X					X	X	X	X	X	X
163741009	9106-0008-008F	X	X		X	X					X	X	X	X	X	X
164542008	9106-0009-002F	X			X	X					X	X	X	X	X	X
164542003	9106-0009-017F	X			X	X					X	X	X	X	X	X
163105009	9106-0010-001F	X			X	X					X	X	X	X	X	X
163105016	9106-0010-012F	X			X	X					X	X	X	X	X	X

# **Chain of Custody and Supporting Documentation**



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### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

### Chain of Custody Form

No. 2006-00372

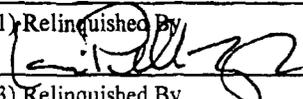
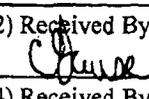
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALI	Sr-90					Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
9106-0002-009F	5/18/06	14:28	SE	C	BP		X			Transferred from COC 2006-00364				
9106-0002-010F	5/18/06	14:50	SE	C	BP	X		X		Transferred from COC 2006-00364				
9106-0002-011F	5/19/06	08:10	SE	C	BP	X		X		Transferred from COC 2006-00365				
9106-0002-012F	5/19/06	08:31	SE	C	BP	X		X		Transferred from COC 2006-00365				
9106-0002-013F	5/19/06	09:00	SE	C	BP	X		X		Transferred from COC 2006-00365				
9106-0002-014F	5/19/06	09:58	SE	C	BP	X		X		Transferred from COC 2006-00365				
9106-0002-014FS	5/19/06	09:58	SE	C	BP	X		X		Transferred from COC 2006-00365				
9106-0002-015F	5/19/06	10:29	SE	C	BP	X		X		Transferred from COC 2006-00365				
9106-0002-016F	5/19/06	13:19	SE	C	BP	X		X		Transferred from COC 2006-00365				
NOTES: PO #: 002332 MSR #: 06- SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA 0755										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: _____ Deg. C Custody Sealed? Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>		
1) Relinquished By 			Date/Time 6/10/06 0815		2) Received By 			Date/Time 6-2-06 9:20		Bill of Lading # 7909 4145 5709				
3) Relinquished By			Date/Time		4) Received By			Date/Time						
5) Relinquished By			Date/Time		6) Received By			Date/Time						

Figure 1. Sample Check-in List

Date/Time Received: 6-2-06 9:20

SDG#: MSR#06-0755

Work Order Number: 1642201

Shipping Container ID: 1909 41455710 Chain of Custody # 2006-00371

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 23°
- 5. Vermiculite/packing materials is: Wet  Dry  NO PACKING Bot wet
- 6. Number of samples in shipping container: 9
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: *Glause* Date: 6-2-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Chem

Figure 1. Sample Check-in List

Date/Time Received: 6-2-06 9:20

SDG#: MSR#06-0755

Work Order Number: 1642201

Shipping Container ID: 1909 4145 5109 Chain of Custody #: 2006-00372

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 23°
- 5. Vermiculite/packing materials is: Wet  Dry  no packing's bot wet
- 6. Number of samples in shipping container: 9
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sample Custodian/Laboratory: Couder Hus Date: 6-2-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>		SDG/ARCOC/Work Order: <u>164220</u>	
Date Received: <u>6-2-06</u>		PM(A) Review (ensure non-conforming items are resolved prior to signing): <u>[Signature]</u>	
Received By: <u>[Signature]</u>			

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?				Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant #    ice bags    blue ice    dry ice    none    other (describe)
3 Chain of custody documents included with shipment?				
4 Sample containers intact and sealed?				Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8 Samples received within holding time?				Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?				<u>COC # 2006-00371</u>
14 Air Bill, Tracking #'s, & Additional Comments				

Suspected Hazard Information	Non-Regulated	Regulated	High Level	Comments
A Radiological Classification?				RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Maximum Counts Observed*: <u>20CPM</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Comments: Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification:	Initials: <u>[Signature]</u>	Date: <u>6/2/06</u>
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# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCOC/Work Order: <u>164220</u>
Date Received: <u>6-2-06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>[Signature]</i>
Received By: <u>[Signature]</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?				Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant #    ice bags    blue ice    dry ice    none    other (describe)
3 Chain of custody documents included with shipment?				
4 Sample containers intact and sealed?				Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8 Samples received within holding time?				Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?				COC # <u>2006-00372</u> <u>00372</u> <u>06/2/06</u>
14 Air Bill , Tracking #'s, & Additional Comments				

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?		<input checked="" type="checkbox"/>		Maximum Counts Observed*: <u>200 cpm</u>
B PCB Regulated?	<input checked="" type="checkbox"/>			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification: _____				Initials: <u>[Signature]</u> Date: <u>6/2/06</u>

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9106-0003-001F  
9106-0003-002F  
9106-0003-003F  
9106-0003-004F  
9106-0003-004FS  
9106-0003-005F  
9106-0003-006F  
9106-0003-007F  
9106-0003-008F

### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

### Chain of Custody Form

No. 2006-00312

1623347 1623351 CD 5/8/06

Project Name: Haddam Neck Decommissioning			Analyses Requested				Lab Use Only				
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024			Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL	Sr-90	Comments:		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones											
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.											
Sample Designation	Date	Time									
9106-0003-001F	4/24/06	14:13	SE	C	BP	X			Transferred from COC2006-00221	Lab Sample ID	
9106-0003-002F	4/24/06	14:39	SE	C	BP	X			Transferred from COC2006-00221		
9106-0003-003F	4/24/06	15:01	SE	C	BP	X			Transferred from COC2006-00221		
9106-0003-004F	4/25/06	08:41	SE	C	BP	X			Transferred from COC2006-00223		
9106-0003-004FS	4/25/06	08:41	SE	C	BP	X			Transferred from COC2006-00223		
9106-0003-005F	4/25/06	09:21	SE	C	BP	X			Transferred from COC2006-00223		
9106-0003-006F	4/25/06	09:46	SE	C	BP	X			Transferred from COC2006-00223		
9106-0003-007F	4/25/06	10:28	SE	C	BP	X			Transferred from COC2006-00223		
9106-0003-008F	4/25/06	11:15	SE	C	BP		X		Transferred from COC2006-00223		
NOTES: PO #: 002332 MSR #: 06- <sup>0652</sup> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA Combined samples 9106-0003-003F taken on 4/25/06 @08:19 and 9106-0003-003FB taken on 4/25/06 @ 08:19 in order to have sufficient sample for counting.						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other			Internal Container Temp.: _____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>		
1) Relinquished By JAIME RICARTE			Date/Time 5-4-06 / 13:30			2) Received By C. Demicetto			Date/Time 5/5/06 / 10:15		
3) Relinquished By			Date/Time			4) Received By			Date/Time		
5) Relinquished By			Date/Time			6) Received By			Date/Time		
Bill of Lading #						7920-8920-0240					

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010  
011  
012  
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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00313

*162334% 162335%*

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024							FSSGAM	FSSALL	Sr-90	Comments:				
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code							Comment, Preservation	Lab Sample ID	
9106-0003-009F	4/25/06	13:00	SE	C	BP	X						Transferred from COC 2006-00236		
9106-0003-010F	4/25/06	13:23	SE	C	BP	X						Transferred from COC 2006-00236		
9106-0003-010FS	4/25/06	13:23	SE	C	BP	X						Transferred from COC 2006-00236		
9106-0003-012F	4/25/06	15:12	SE	C	BP	X						Transferred from COC 2006-00236		
9106-0003-013F	4/25/06	14:21	SE	C	BP	X						Transferred from COC 2006-00236		
9106-0003-014F	4/25/06	14:48	SE	C	BP		X					Transferred from COC 2006-00236		
9106-0003-015F	4/26/06	08:16	SE	C	BP	X						Transferred from COC 2006-00237		
9106-0003-016F	4/26/06	09:41	SE	C	BP	X						Transferred from COC 2006-00237		
9106-0003-017F	4/26/06	09:18	SE	C	BP	X						Transferred from COC 2006-00237		
9106-0003-018F	4/26/06	08:59	SE	C	BP	X						Transferred from COC 2006-00237		
NOTES: PO #: 002332 MSR #: 06- <sup>0652</sup> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container: Temp: _____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAMES RICHARDS			Date/Time 5-1-06 / 1330			2) Received By C. Derricetto			Date/Time 5/5/06 / 1015			Bill of Lading # 7920-8920-0261		
3) Relinquished By			Date/Time			4) Received By			Date/Time					

Chem 1

162335

Figure 1. Sample Check-in List

Date/Time Received: 5/5/06 1015

SDG#: MSR#06-0652

Work Order Number: 162335

Shipping Container ID: 7920 8920 0261 Chain of Custody #: 2006-00312

1. Custody Seals on shipping container intact? Yes  No

2. Custody Seals dated and signed? Yes  No

3. Chain-of-Custody record present? Yes  No

4. Cooler temperature 19°C

5. Vermiculite/packing materials is: Wet  Dry  n/a

6. Number of samples in shipping container: [10] ten / [9] nine

7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input checked="" type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: C. Derricotte Date: 5/5/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only **162335**

Client: <u>Yankee</u>	SDG/ARCOC/Work Order:
Date Received: <u>04/5/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>C. Derricotte</u>	<u>Clyde</u>

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant # ice bags blue ice dry ice none <u>other describe</u> <u>1900</u> <u>Peanutts</u>
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	✓			
14	Air Bill ,Tracking #'s, & Additional Comments				<u>FedEx #</u> <u>7920 8920 0261</u> <u>" " " 0240</u>

	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?		✓		Maximum Counts Observed*: <u>30 CPM</u>
B	PCB Regulated?	✓			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification:					Initials <u>CDJ</u> Date: <u>5/5/06</u>

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### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

### Chain of Custody Form

No. 2006-00336

Project Name: Haddam Neck Decommissioning						Analyses Requested					Lab Use Only												
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024														Comments									
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones																							
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.																							
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL	Sr-90															
											Comment, Preservation	Lab Sample ID											
9106-0004-001F	05/3/06	09:37	SE	C	BP		X	X				Transferred from COC 2006-00316											
9106-0004-002F	05/3/06	09:56	SE	C	BP	X		X				Transferred from COC 2006-00316											
9106-0004-003F	05/3/06	10:28	SE	C	BP	X		X				Transferred from COC 2006-00316											
9106-0004-004F	05/3/06	10:48	SE	C	BP	X		X				Transferred from COC 2006-00316											
9106-0004-004FS	05/3/06	10:48	SE	C	BP	X		X				Transferred from COC 2006-00316											
9106-0004-005F	05/3/06	11:07	SE	C	BP	X		X				Transferred from COC 2006-00316											
9106-0004-006F	05/3/06	12:46	SE	C	BP	X		X				Transferred from COC 2006-00317											
9106-0004-007F	05/4/06	07:55	SE	C	BP	X		X				Transferred from COC 2006-00320											
9106-0004-017F	05/4/06	09:27	SE	C	BP	X		X				Transferred from COC 2006-00320											
NOTES: PO #: 002332 MSR #: 06-0688 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other												
1) Relinquished By _____ Date/Time _____			2) Received By _____ Date/Time _____			Internal Container Temp: 72 Deg C Custody Sealed? <input checked="" type="checkbox"/> Custody Seal Intact? <input checked="" type="checkbox"/>																	
3) Relinquished By _____ Date/Time _____			4) Received By _____ Date/Time _____																				
Bill of Lading # 7919-3895-8881																							

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### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

### Chain of Custody Form

No. 2006-00337

Project Name: Haddam Neck Decommissioning						Analyses Requested			Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90	Comments  <i>102232-1</i>		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones											
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.											
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code					Comment, Preservation	Lab Sample ID
9106-0004-008F ✓	5/04/06	08:58	SE	C	BP	X		X		Transferred from COC 2006-00320	
9106-0004-009F ✓	5/04/06	08:23	SE	C	BP	X		X		Transferred from COC 2006-00320	
9106-0004-010F ✓	5/03/06	15:11	SE	C	BP	X		X		Transferred from COC 2006-00317	
9106-0004-010FS ✓	5/03/06	15:11	SE	C	BP	X		X		Transferred from COC 2006-00317	
9106-0004-011F ✓	5/03/06	13:08	SE	C	BP	X		X		Transferred from COC 2006-00317	
9106-0004-012F ✓	5/03/06	13:33	SE	C	BP	X		X		Transferred from COC 2006-00317	
9106-0004-013F ✓	5/03/06	13:54	SE	C	BP	X		X		Transferred from COC 2006-00317	
9106-0004-014F ✓	5/03/06	14:43	SE	C	BP		X	X		Transferred from COC 2006-00317	
9106-0004-015F ✓	5/03/06	14:18	SE	C	BP	X		X		Transferred from COC 2006-00317	
NOTES: PO #: 002332 MSR #: 06-0688 SSWP# NA						<input checked="" type="checkbox"/> LTP QA		<input type="checkbox"/> Radwaste QA		<input type="checkbox"/> Non QA	
1) Relinquished By _____			Date/Time _____			2) Received By <i>[Signature]</i>			Date/Time _____		
3) Relinquished By _____			Date/Time _____			4) Received By <i>[Signature]</i>			Date/Time <i>5/12/06 09:20</i>		
Samples Shipped Via:						<input checked="" type="checkbox"/> Fed Ex		<input type="checkbox"/> UPS		<input type="checkbox"/> Hand	
						<input type="checkbox"/> Other				Internal Container Temp: <i>17</i> Deg C	
										Custody Sealed? <input checked="" type="checkbox"/> N/A	
										Custody Seal Intact? <input checked="" type="checkbox"/> N/A	
										Bill of Lading # <i>7919 3895 8892</i>	

Figure 1. Sample Check-in List

Date/Time Received: 5.12.06 09:20

SDG#: MSR#06-0688

Work Order Number: 162832.1

Shipping Container ID: 7914 3895 8892 Chain of Custody # 2006-00337

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature N/A
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: 9
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input type="checkbox"/> in good condition	<input checked="" type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: Emily Martin Date: 5.12.06 09:20

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

Figure 1. Sample Check-in List

Date/Time Received: 5/12/06 @ 0920

SDG#: MSR #06-0688

Work Order Number: 1628321

Shipping Container ID: 7919 3895 8892 7470 Chain of Custody # 2006-00337

- 1. Custody Seals on shipping container intact? Yes [ ] No
- 2. Custody Seals dated and signed? Yes [ ] No
- 3. Chain-of-Custody record present? Yes  No [ ]
- 4. Cooler temperature 17°C
- 5. Vermiculite/packing materials is: Wet  Dry [ ]
- 6. Number of samples in shipping container: \_\_\_\_\_
- 7. Sample holding times exceeded? Yes [ ] No

8. Samples have:	
<input checked="" type="checkbox"/> tape	_____ hazard labels
<input checked="" type="checkbox"/> custody seals	_____ appropriate sample labels
9. Samples are:	
_____ in good condition	<input checked="" type="checkbox"/> leaking
_____ broken	_____ have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No [ ]

11. Description of anomalies (include sample numbers): zail was busting out of container bag

Sample Custodian/Laboratory: C. Demicida Date: 5/12/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_





# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>CT Yankee</u>	SDG/ARCOC/Work Order: <u>162832</u>
Date Received: <u>5.12.06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>E. Martin</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		X		Circle Coolant # ice bags blue ice dry ice none other describe)
3 Chain of custody documents included with shipment?	X			
4 Sample containers intact and sealed?			X	Circle Applicable: seals broken damaged container <u>leaking container</u> other (describe) <u>SN: 9106-0007-014F</u>
5 Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			X	
8 Samples received within holding time?	X			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11 Number of containers received match number indicated on COC?	X			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?			X	<u>Coc not relinquished</u>
14 Air Bill ,Tracking #'s, & Additional Comments				<u>7919 3895 8892</u>

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt #
A Radiological Classification?		X		*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	X			Maximum Counts Observed*: <u>&lt; Bkgd.</u> Comments: <u>Bkgd = 40 cpm</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	X			Hazard Class Shipped: <u>N/A</u> UN#: <u>N/A</u>
PM (or PMA) review of Hazard classification:				Initials: <u>[Signature]</u> Date: <u>5/12/06</u>



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Vankel</u>	SDG/ARCOC/Work Order: <u>162832</u>
Date Received: <u>5/12/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>C. Derricotte</u>	<i>[Signature]</i>

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Coolant # ice bags blue ice dry ice <u>none</u> other (describe)  <u>170C</u>
3	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			<u>COCs are wet</u>
4	Sample containers intact and sealed?			<input checked="" type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other (describe) <u>burst bag w/ RSOs cooler 7970 9480 6088 (1)</u>
5	Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH: <u>8.97</u>
6	VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>	
8	Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?			<input checked="" type="checkbox"/>	<u>no COCs are relinquished</u>

14	Air Bill, Tracking #'s, & Additional Comments	<u>FedEx #'s</u> <u>see continuation sheet</u>			
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#	Suspected Hazard Information	Non-Regulated	Regulated	High Level	Comments
A	Radiological Classification?		<input checked="" type="checkbox"/>		RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B	PCB Regulated?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>100 @ 40 CPA</u>
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: _____ UN#: _____

PM (or PMA) review of Hazard classification:	Initials: <u>CD</u>	Date: <u>5/12/06</u>
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### Chain of Custody Form

No. 2006-00319

### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90					Comments
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.													
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID		
9106-0005-010F	5/02/06	13:16	SE	C	BP	X		X		Transferred from COC 2006-00314			
9106-0005-011F	5/02/06	13:39	SE	C	BP	X		X		Transferred from COC 2006-00314			
9106-0005-013F	5/02/06	14:35	SE	C	BP	X		X		Transferred from COC 2006-00314			
9106-0005-014F	5/02/06	15:04	SE	C	BP	X		X		Transferred from COC 2006-00314			
9106-0005-016F	5/02/06	13:59	SE	C	BP	X		X		Transferred from COC 2006-00314			
9106-0005-015F	5/03/06	08:03	SE	C	BP	X		X		Transferred from COC 2006-00316			
9106-0005-017F	5/03/06	08:13	SE	C	BP	X		X		Transferred from COC 2006-00316			
9106-0005-018F	5/03/06	09:09	SE	C	BP	X		X		Transferred from COC 2006-00316			
9106-0005-018FS	5/03/06	09:09	SE	C	BP	X		X		Transferred from COC 2006-00316			
NOTES: PO #: 002332 MSR #: 06-0675 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other	Internal Container Temp. Deg. C Custody Sealed? Custody Seal Intact?	
1) Relinquished By <i>[Signature]</i> Date/Time 5-8-06 1440			2) Received By <i>[Signature]</i> Date/Time 5/9/06 0930										
3) Relinquished By Date/Time			4) Received By Date/Time			Bill of Lading # 7920 9195 4352							

111

Figure 1. Sample Check-in List

Date/Time Received: 5/9/06 0930

SDG#: MSR# 06-0675

Work Order Number: 1624851

Shipping Container ID: 7920 9195 4352, 4363 Chain of Custody #: 2006-00318/20319

1. Custody Seals on shipping container intact? Yes  No
2. Custody Seals dated and signed? Yes  No
3. Chain-of-Custody record present? Yes  No
4. Cooler temperature 18°C, 19°C
5. Vermiculite/packing materials is: Wet  Dry
6. Number of samples in shipping container: 18
7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input type="checkbox"/> in good condition	<input checked="" type="checkbox"/> leaking (some bags)
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: *Beidle* Date: 5/9/06 0930

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>ATMC</u>	SDG/ARCOC/Work Order: <u>162485</u>
Date Received: <u>5/9/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <i>[Signature]</i>
Received By: <u>BHC</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant # ice bags blue ice dry ice none other describe
3 Chain of custody documents included with shipment?				
4 Sample containers intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				<i>BHC 5/9/06</i>
8 Samples received within holding time?				Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?				

14 Air Bill ,Tracking #'s, & Additional Comments	<u>Fed 7920 9195 4352 → 19°C</u> <u>Ex 4363 → 18°C</u>
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Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?				Maximum Counts Observed*: <u>80 cpm</u>
B PCB Regulated?				Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.				Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: \_\_\_\_\_ Initials CAJ Date: 5/9/06

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### Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

### Chain of Custody Form

No. 2006-00332

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested				Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90				Comments
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones												
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.												
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID
9106-0006-004F	4/28/06	12:46	SE	C	BP	X		X			Transferred from COC 2006-00317	
9106-0006-005F	4/28/06	13:03	SE	C	BP	X		X			Transferred from COC 2006-00317	
9106-0006-006F	4/28/06	13:22	SE	C	BP	X		X			Transferred from COC 2006-00317	
9106-0006-007F	4/28/06	13:41	SE	C	BP	X		X			Transferred from COC 2006-00317	
9106-0006-007FS	4/28/06	13:41	SE	C	BP	X		X			Transferred from COC 2006-00317	
9106-0006-012F	5/01/06	13:40	SE	C	BP	X		X			Transferred from COC 2006-00317	
9106-0006-017F	5/01/06	14:03	SE	C	BP	X		X			Transferred from COC 2006-00317	

NOTES: PO #: 002332 MSR #: 06-0687 SSWP# NA  LTP QA  Radwaste QA  Non QA

Samples Shipped Via:  
 Fed Ex  
 UPS  
 Hand  
 Other

Internal Container Temp: 170 Deg C  
 Custody Sealed?  YES  NO  
 Custody Seal Intact?  YES  NO

1) Relinquished By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 2) Received By *C. DeNicotro* Date/Time *5/12/06 0920*  
 3) Relinquished By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 4) Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

Bill of Lading #  
7920-9480-6688

Figure 1. Sample Check-in List

Date/Time Received: 5/12/06 @ 0920

SDG#: MSR#06-0687

Work Order Number: 1628501

Shipping Container ID: See cont sheet Chain of Custody #: See cont sheet

1. Custody Seals on shipping container intact? Yes [ ] No
2. Custody Seals dated and signed? Yes [ ] No
3. Chain-of-Custody record present? Yes  No [ ]
4. Cooler temperature 1700
5. Vermiculite/packing materials is: Wet  Dry [ ]
6. Number of samples in shipping container: See cont sheet
7. Sample holding times exceeded? Yes [ ] No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No

11. Description of anomalies (include sample numbers): N/A

Sample Custodian/Laboratory: C. Duricotte Date: 5/12/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Yankel</u>	SDG/ARCOC/Work Order: <u>162832, 162850</u>
Date Received: <u>5/12/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>C. Derricotte</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Coolant # ice bags blue ice dry ice <u>none</u> other (describe) <u>17°C</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			<u>COCs are wet</u>
4 Sample containers intact and sealed?			<input checked="" type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other (describe) <u>busted bag w/ RSOs cooler 7920 9480 6038 (C)</u>
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH: <u>8892</u>
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>	
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?			<input checked="" type="checkbox"/>	<u>no COCs are relinquished</u>

14 Air Bill, Tracking #'s, & Additional Comments	<u>FedEx #'s</u> <u>see continuation sheet</u>
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Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?		<input checked="" type="checkbox"/>		Maximum Counts Observed*: <u>100 (C) 40 cpm</u>
B PCB Regulated?	<input checked="" type="checkbox"/>			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification:	Initials <u>[Signature]</u>	Date: <u>5/12/06</u>
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Connecticut Yankee Atomic Power Company						Chain of Custody Form				No. 2006-00367	
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						163741%					
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested				Lab Use Only	
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90	Ni-63	Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones											
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.											
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL	Sr-90	Ni-63	Comment, Preservation	Lab Sample ID
9106-0008-001F	5/05/06	11:13	SE	C	BP	X		X	X	Transferred from COC # 2006-00324	
9106-0008-003F	5/5/06	13:35	SE	C	BP	X		X	X	Transferred from COC # 2006-00325	
9106-0008-004F	5/5/06	13:51	SE	C	BP	X		X	X	Transferred from COC # 2006-00325	
9106-0008-005F	5/5/06	14:17	SE	C	BP	X		X	X	Transferred from COC # 2006-00325	
9106-0008-006F	5/5/06	14:36	SE	C	BP	X		X	X	Transferred from COC # 2006-00325	
9106-0008-006FS	5/5/06	14:36	SE	C	BP	X		X	X	Transferred from COC # 2006-00325	
9106-0008-007F	5/5/06	15:03	SE	C	BP		X			Transferred from COC # 2006-00325	
9106-0008-002F	5/5/06	13:10	SE	C	BP	X		X	X	Transferred from COC # 2006-00325	
NOTES: PO #: 002332 MSR #: 06-0743 SSWP#NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other				Internal Container Temp.: ____ Deg. C  Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By <i>[Signature]</i>		Date/Time 5-25-06 0950		2) Received By <i>[Signature]</i>		Date/Time 5/26/06 0930					
3) Relinquished By		Date/Time		4) Received By		Date/Time		Bill of Lading # R275154 1162			

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00366

163741%

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only				
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Sr-90	Ni-63				Comments:		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													Comment, Preservation		Lab Sample ID
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.															
Sample Designation	Date	Time													
9106-0008-008F	5/08/06	08:01	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
9106-0008-009F	5/08/06	08:32	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
9106-0008-010F	5/08/06	09:09	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
9106-0008-010FS	5/08/06	09:09	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
9106-0008-011F	5/08/06	09:30	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
9106-0008-012F	5/08/06	09:53	SE	C	BP		X				Transferred from COC # 2006-00327				
9106-0008-013F	5/08/06	10:16	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
9106-0008-014F	5/08/06	10:47	SE	C	BP	X		X	X		Transferred from COC # 2006-00327				
NOTES: PO #: 002332 MSR #: 06-0743 SSWP#NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: <u>21</u> Deg. C  Custody Sealed? Y <input type="checkbox"/> N <input checked="" type="checkbox"/>  Custody Seal Intact?  Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
1) Relinquished By			Date/Time		2) Received By			Date/Time							
					<i>C. DeLuca</i>			<i>5/26/06 0930</i>							
3) Relinquished By			Date/Time		4) Received By			Date/Time							
Bill of Lading #															

009  
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Figure 1. Sample Check-in List

Date/Time Received: 5/24/06 0930

SDG#: \_\_\_\_\_

Work Order Number: \_\_\_\_\_

Shipping Container ID: 79275154 1162 Chain of Custody # 2006-00367

1. Custody Seals on shipping container intact? Yes [] No []
2. Custody Seals dated and signed? Yes [] No []
3. Chain-of-Custody record present? Yes [] No []
4. Cooler temperature 19°C
5. Vermiculite/packing materials is: Wet [] Dry [] NA
6. Number of samples in shipping container: 8
7. Sample holding times exceeded? Yes [] No []

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes [] No []

11. Description of anomalies (include sample numbers): \_\_\_\_\_

\_\_\_\_\_

Sample Custodian/Laboratory: [Signature] Date: 5/24/06 [Signature]

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Yankee</u>	SDG/ARCOC/Work Order: <u>1637417</u>
Date Received: <u>5/26/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <u>[Signature]</u>
Received By: <u>[Signature]</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		/		Circle Coolant # ice bags blue ice dry ice <u>(none)</u> other describe <u>19°C</u>
3 Chain of custody documents included with shipment?	/			
4 Sample containers intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/	
8 Samples received within holding time?	/			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11 Number of containers received match number indicated on COC?	/			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	/			

14 Air Bill, Tracking #'s, & Additional Comments	<u>7927 SF54 1162</u>		
--	-----------------------	--	--

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt #
A Radiological Classification? <u>4M 5249</u>	X	/		*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	/			Maximum Counts Observed*: <u>cpm 20 Pac R50</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Comments: Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: [Signature] Initials 5/26/06 Date:



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Yankee</u>	SDG/ARCOC/Work Order: <u>1637417.</u>
Date Received: <u>5/26/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <u>EL</u>
Received By: <u>C. Quijada</u>	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant #    ice bags    blue ice    dry ice <u>none</u> other (describe)  <u>2100</u>
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	✓		✓	<u>not relinquished</u>
14	Air Bill, Tracking #'s, & Additional Comments				<u>7927 5154 1173</u> <u>COC # 2604 - 00364</u>

	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	✓	✓		Maximum Counts Observed*: <u>40 cpm</u>
B	PCB Regulated?	✓			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification: <u>EL</u> Initials <u>5/26/06</u> Date:					

1637417

Figure 1. Sample Check-in List

Date/Time Received: 5/26/06 @ 0930

SDG#: \_\_\_\_\_

Work Order Number: \_\_\_\_\_

Shipping Container ID: 79215K41173 Chain of Custody #: 2006-003644

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 21°
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: (8) eight
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): ~ / ~

Sample Custodian/Laboratory: C. Pericchi Date: 5/26/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

164542-1

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00380

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024							FSSGAM	FSSALL	Ni-63	Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.													
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code						Comment, Preservation	Lab Sample ID	
9106-0009-016F	5/15/06	13:28	SE	C	BP	X		X			Transferred from COC 2006-00352		
9106-0009-016FS	5/15/06	13:28	SE	C	BP	X		X			Transferred from COC 2006-00352		
9106-0009-017F	5/15/06	14:03	SE	C	BP	X		X			Transferred from COC 2006-00352		
9106-0009-011F	5/15/06	08:05	SE	C	BP		X				Transferred from COC 2006-00351		
9106-0009-013F	5/15/06	08:35	SE	C	BP	X		X			Transferred from COC 2006-00351		
9106-0009-013FS	5/15/06	08:35	SE	C	BP	X		X			Transferred from COC 2006-00351		
9106-0009-014F	5/15/06	08:59	SE	C	BP		X				Transferred from COC 2006-00351		
9106-0009-015F	5/15/06	09:36	SE	C	BP	X		X			Transferred from COC 2006-00351		

21  
22  
23  
24  
25  
26  
27  
28

NOTES: PO #: 002332 MSR #: 06-0818 SSWP# NA  LTP QA  Radwaste QA  Non QA

Samples Shipped Via:  
 Fed Ex  
 UPS  
 Hand  
  
 Other

Internal Container Temp.: \_\_\_ Deg. C  
  
Custody Sealed?  
Y  N   
Custody Seal Intact?  
  
Y  N

1) Relinquished By <i>Jane Ricard</i>	Date/Time 6-7-06/11:00	2) Received By <i>Alley</i>	Date/Time 6-8-06 9:00
3) Relinquished By	Date/Time	4) Received By	Date/Time

Bill of Lading #  
7921-1915 2869

164542-1.

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**Connecticut Yankee Atomic Power Company**

362 Injun Hollow Road, East Hampton, CT 06424  
860-267-2556

**Chain of Custody Form**

No. 2006-00381

Project Name: Haddam Neck Decommissioning						Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						FSSGAM	FSSALL	Ni-63				Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones													
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input type="checkbox"/> 7 D.													
Media Code													
Sample Designation			Date	Time	Sample Type Code	Container Size & Type Code					Comment, Preservation	Lab Sample ID	
007	9106-0009-001F			5/11/06	13:22	SE	C	BP	X		X	Transferred from COC 2006-00347	
008	9106-0009-002F			5/11/06	13:46	SE	C	BP	X		X	Transferred from COC 2006-00347	
009	9106-0009-003F			5/11/06	14:06	SE	C	BP	X		X	Transferred from COC 2006-00347	
010	9106-0009-004F			5/11/06	14:30	SE	C	BP	X		X	Transferred from COC 2006-00347	
011	9106-0009-005F			5/11/06	14:55	SE	C	BP	X		X	Transferred from COC 2006-00347	
012	9106-0009-007F			5/12/06	07:44	SE	C	BP	X		X	Transferred from COC 2006-00348	
013	9106-0009-008F			5/12/06	08:16	SE	C	BP	X		X	Transferred from COC 2006-00348	
014	9106-0009-009F			5/12/06	08:35	SE	C	BP	X		X	Transferred from COC 2006-00348	
016	9106-0009-010F			5/12/06	09:07	SE	C	BP	X		X	Transferred from COC 2006-00348	
NOTES: PO #: 002332 MSR #: 06- SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: ____ Deg. C  Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/>  Custody Seal Intact?  Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By JAMES RIVARTE				Date/Time 6-7-06/11:00		2) Received By AMoly				Date/Time 6/8/06 900		Bill of Lading # 7921 1415 2858	
3) Relinquished By				Date/Time		4) Received By				Date/Time			

Cheryl 10451% 10451%

CPM 40

Connecticut Yankee  
Statement of Work for Analytical Lab Services

CY-ISC-SOW-001

Figure 1. Sample Check-in List

Date/Time Received: 6-8-06 900

SDG#: MSR# 06-0819, 0818

Work Order Number: \_\_\_\_\_

Shipping Container ID: 7921-1915-2858 Chain of Custody #: 2008-00382  
11-11-8786 2006-00380  
2006-00381

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 20°C
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: \_\_\_\_\_
- 7. Sample holding times exceeded? Yes  No

8. Samples have:

tape \_\_\_\_\_ hazard labels

custody seals \_\_\_\_\_ appropriate sample labels

---

9. Samples are:

in good condition \_\_\_\_\_ leaking

\_\_\_\_\_ broken \_\_\_\_\_ have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: A. Malin Date: 6-8-06 900

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



Figure 1. Sample Check-in List

Date/Time Received: 945 5/17/06

SDG#: MAP# 06-0707

Work Order Number: 1631051

Shipping Container ID: 7904 3113 8541 Chain of Custody #: 2006-00349

- 1. Custody Seals on shipping container intact? Yes  No
- 2. Custody Seals dated and signed? Yes  No
- 3. Chain-of-Custody record present? Yes  No
- 4. Cooler temperature 17°C
- 5. Vermiculite/packing materials is: Wet  Dry
- 6. Number of samples in shipping container: 9
- 7. Sample holding times exceeded? Yes  No

8. Samples have:	
<input type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input checked="" type="checkbox"/> <del>leaking</del> <sup>AM</sup>
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes  No

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: AMaly Date: 5-17-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

CHERYL

PM use only

Client: <u>CONN. YANKEE</u>	SDG/ARCO/Work Order:
Date Received: <u>5-17-06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>ALM</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant # ice bags blue ice dry ice <u>none</u> other describe)
3 Chain of custody documents included with shipment?	✓			
4 Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8 Samples received within holding time?	✓			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11 Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	✓			
14 Air Bill ,Tracking #'s, & Additional Comments				7904 3113 8541

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?	✓	✓		Maximum Counts Observed*: <u>CPM 60</u>
B PCB Regulated?	✓			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification:		Initials <u>CD</u>		Date: <u>5/17/06</u>

**List of current GEL Certifications as of 15 August 2006**

<b>State</b>	<b>Certification</b>
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	N/A
Virginia	00151
Washington	C223

# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 168404**

**Method/Analysis Information**

<b>Product:</b>	<b>Alphaspec Am241, Cm, Solid ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	555696
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153129	Method Blank (MB)
1201153130	168340011(9304-01-005C) Sample Duplicate (DUP)
1201153131	168340011(9304-01-005C) Matrix Spike (MS)
1201153132	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168340011 (9304-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Sample 168404003 (9106-0003-004F) was recounted due to high MDA.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Alphaspec Am241, Cm, Solid ALL FSS

Analytical Method: DOE EML HASL-300, Am-05-RC Modified

Prep Method: Ash Soil Prep

Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep

Analytical Batch Number: 557837

Prep Batch Number: 554650

Dry Soil Prep GL-RAD-A-021 Batch Number: 554649

Sample ID	Client ID
168404009	9106-0006-005F
168404010	9106-0008-006F
1201158316	Method Blank (MB)
1201158317	168404009(9106-0006-005F) Sample Duplicate (DUP)
1201158318	168404009(9106-0006-005F) Matrix Spike (MS)
1201158319	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

The blank volume is representative of the sample volume in this batch.

##### **Designated QC**

The following sample was used for QC: 168404009 (9106-0006-005F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Alphaspec Pu, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	555697
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153133	Method Blank (MB)
1201153134	168340011(9304-01-005C) Sample Duplicate (DUP)
1201153135	168340011(9304-01-005C) Matrix Spike (MS)
1201153136	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168340011 (9304-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Pu241, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	555698
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153137	Method Blank (MB)
1201153138	168340011(9304-01-005C) Sample Duplicate (DUP)
1201153139	168340011(9304-01-005C) Matrix Spike (MS)
1201153140	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168340011 (9304-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>GFPC, Sr90, solid-ALL FSS</b>
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	556350
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

<b>Sample ID</b>	<b>Client ID</b>
168404003	9106-0003-004F
168404004	9106-0003-015F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201154644	Method Blank (MB)
1201154645	168404003(9106-0003-004F) Sample Duplicate (DUP)
1201154646	168404003(9106-0003-004F) Matrix Spike (MS)
1201154647	Laboratory Control Sample (LCS)

### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

#### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

### **Quality Control (QC) Information:**

#### **Blank Information**

The blank volume is representative of the sample volume in this batch.

#### **Designated QC**

The following sample was used for QC: 168404003 (9106-0003-004F).

#### **QC Information**

All of the QC samples met the required acceptance limits.

### **Technical Information:**

#### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

#### **Preparation Information**

All preparation criteria have been met for these analyses.

#### **Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Chemical Recoveries**

All chemical recoveries meet the required acceptance limits for this sample set.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Samples 1201154644 (MB), 1201154645 (9106-0003-004F), 1201154646 (9106-0003-004F), 1201154647 (LCS), 168404003 (9106-0003-004F), 168404004 (9106-0003-015F), 168404012 (9106-0009-002F), 168404013 (9106-0009-017F), 168404014 (9106-0010-001F) and 168404015 (9106-0010-012F) were dried and reweighed due to low matrix spike/laboratory control sample recovery.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Tc99, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	554580

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201150561	Method Blank (MB)
1201150562	168340012(9304-02-003C) Sample Duplicate (DUP)
1201150563	168340012(9304-02-003C) Matrix Spike (MS)
1201150564	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168340012 (9304-02-003C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	555722
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201153222	Method Blank (MB)
1201153223	168340012(9304-02-003C) Sample Duplicate (DUP)
1201153224	168340012(9304-02-003C) Matrix Spike (MS)
1201153225	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168340012 (9304-02-003C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Ni63, Solid-ALL FSS</b>
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	555723
Prep Batch Number:	554650
Dry Soil Prep GL-RAD-A-021 Batch Number:	554649

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
1201153226	Method Blank (MB)
1201153227	168340012(9304-02-003C) Sample Duplicate (DUP)
1201153228	168340012(9304-02-003C) Matrix Spike (MS)
1201153229	Laboratory Control Sample (LCS)

### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

#### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

### **Quality Control (QC) Information:**

#### **Blank Information**

The blank volume is representative of the sample volume in this batch.

#### **Designated QC**

The following sample was used for QC: 168340012 (9304-02-003C).

#### **QC Information**

All of the QC samples met the required acceptance limits.

### **Technical Information:**

#### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

#### **Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS  
**Analytical Method:** EPA 906.0 Modified  
**Analytical Batch Number:** 554582

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201150569	Method Blank (MB)
1201150570	168340011(9304-01-005C) Sample Duplicate (DUP)
1201150571	168340011(9304-01-005C) Matrix Spike (MS)
1201150572	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 12.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168340011 (9304-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Sample 168404010 (9106-0008-006F) was recounted due to high MDA.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS  
**Analytical Method:** EPA EERF C-01 Modified  
**Analytical Batch Number:** 554583

<b>Sample ID</b>	<b>Client ID</b>
168404001	9106-0002-007F
168404002	9106-0002-011F
168404003	9106-0003-004F
168404004	9106-0003-015F
168404005	9106-0004-005F
168404006	9106-0004-015F
168404007	9106-0005-010F
168404008	9106-0005-014F
168404009	9106-0006-005F
168404010	9106-0008-006F
168404011	9106-0008-008F
168404012	9106-0009-002F
168404013	9106-0009-017F
168404014	9106-0010-001F
168404015	9106-0010-012F
1201150573	Method Blank (MB)
1201150574	168404003(9106-0003-004F) Sample Duplicate (DUP)
1201150575	168404003(9106-0003-004F) Matrix Spike (MS)
1201150576	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 168404003 (9106-0003-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date: Kath Bellatt 8/22/66

# SAMPLE DATA SUMMARY

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: 168404 GEL Work Order: 168404

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by \_\_\_\_\_

**GENERAL ENGINEERING LABORATORIES, LLC**  
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID:	9106-0002-007F	Project:	YANK01204
Sample ID:	168404001	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	18-MAY-06		
Receive Date:	02-JUN-06		
Collector:	Client		
Moisture:	20.9%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0762	+/-0.102	0.00	+/-0.102	0.0956	pCi/g	BXL1	08/11/06	1336	555696		1
Curium-242	U	0.00	+/-0.0995	0.00	+/-0.0995	0.138	pCi/g						
Curium-243/244	U	-0.00853	+/-0.0717	0.0405	+/-0.0717	0.177	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.199	+/-0.228	0.181	+/-0.229	0.444	pCi/g	BXL1	08/11/06	1633	555697		2
Plutonium-239/240	U	0.0341	+/-0.129	0.120	+/-0.129	0.323	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	10.0	+/-6.64	5.08	+/-6.72	10.7	pCi/g	BXL1	08/16/06	1220	555698		3
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	4.17	+/-6.67	5.28	+/-6.67	11.4	pCi/g	DFA1	08/09/06	1128	554582		4
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	0.0813	+/-0.0797	0.0634	+/-0.0797	0.132	pCi/g	ATH2	08/09/06	0324	554583		5
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	9.90	+/-48.1	32.0	+/-48.1	65.9	pCi/g	MXP1	08/12/06	1633	555722		6
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	7.02	+/-6.39	5.18	+/-6.40	10.6	pCi/g	MXP1	08/11/06	0738	555723		7
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.139	+/-0.213	0.173	+/-0.213	0.360	pCi/g	EGD1	08/11/06	2027	554580		8

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0002-007F  
Sample ID: 168404001

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
5	EPA EERF C-01 Modified												
6	DOE RESL Fe-1, Modified												
7	DOE RESL Ni-1, Modified												
8	DOE EML HASL-300, Tc-02-RC Modified												

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	80	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	100	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	98	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	75	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	76	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	74	(15%-125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

**GENERAL ENGINEERING LABORATORIES, LLC**  
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0002-011F  
Sample ID: 168404002  
Matrix: SE  
Collect Date: 19-MAY-06  
Receive Date: 02-JUN-06  
Collector: Client  
Moisture: 17.4%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.120	+/-0.154	0.0683	+/-0.155	0.251	pCi/g	BXL1	08/11/06	1336	555696	1	
Curium-242	U	-0.0146	+/-0.122	0.0692	+/-0.123	0.303	pCi/g						
Curium-243/244	U	-0.0103	+/-0.0861	0.0487	+/-0.0862	0.213	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0121	+/-0.125	0.127	+/-0.125	0.344	pCi/g	BXL1	08/11/06	1633	555697	2	
Plutonium-239/240	U	0.0254	+/-0.0675	0.0381	+/-0.0675	0.167	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	6.72	+/-7.02	5.56	+/-7.05	11.7	pCi/g	BXL1	08/16/06	1237	555698	3	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	-0.521	+/-7.03	5.94	+/-7.03	12.8	pCi/g	DFA1	08/09/06	1143	554582	4	
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	0.023	+/-0.0828	0.0685	+/-0.0828	0.143	pCi/g	ATH2	08/09/06	0426	554583	5	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	3.93	+/-47.7	31.9	+/-47.7	65.7	pCi/g	MXP1	08/12/06	1649	555722	6	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	7.52	+/-5.81	4.68	+/-5.81	9.60	pCi/g	MXP1	08/11/06	0825	555723	7	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.173	+/-0.203	0.164	+/-0.203	0.341	pCi/g	EGD1	08/11/06	2043	554580	8	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified
5	EPA EERF C-01 Modified

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0002-011F  
Sample ID: 168404002

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
6	DOE RESL	Fe-1, Modified											
7	DOE RESL	Ni-1, Modified											
8	DOE EML	HASL-300, Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	76	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	100	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	88	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	72	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	76	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	79	(15%-125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy—Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0003-004F  
Sample ID: 168404003  
Matrix: SE  
Collect Date: 25-APR-06  
Receive Date: 05-MAY-06  
Collector: Client  
Moisture: 23.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.027	+/-0.117	0.153	+/-0.117	0.488	pCi/g	BXL1	08/13/06	0819	555696		1
Curium-242	U	0.112	+/-0.315	0.245	+/-0.315	0.781	pCi/g						
Curium-243/244	U	0.0217	+/-0.206	0.205	+/-0.206	0.594	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.061	+/-0.189	0.176	+/-0.189	0.449	pCi/g	BXL1	08/11/06	1633	555697		2
Plutonium-239/240	U	0.0551	+/-0.103	0.0584	+/-0.103	0.215	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	8.31	+/-5.73	4.40	+/-5.78	9.25	pCi/g	BXL1	08/16/06	1253	555698		3
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00343	+/-0.0203	0.0172	+/-0.0203	0.036	pCi/g	BXF1	08/14/06	0834	556350		4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	0.603	+/-8.25	6.87	+/-8.25	14.8	pCi/g	DFA1	08/09/06	1159	554582		5
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0937	+/-0.0813	0.0642	+/-0.0813	0.134	pCi/g	ATH2	08/09/06	0529	554583		6
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	7.68	+/-51.2	34.2	+/-51.2	70.4	pCi/g	MXP1	08/12/06	1706	555722		7
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	5.74	+/-7.12	6.58	+/-7.13	13.6	pCi/g	MXP1	08/11/06	0912	555723		8
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.0643	+/-0.198	0.169	+/-0.198	0.351	pCi/g	EGD1	08/11/06	2059	554580		9

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0003-004F      Project: YANK01204  
Sample ID: 168404003                      Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
3													
	DOE EML HASL-300, Pu-11-RC Modified												
4	EPA 905.0 Modified												
5	EPA 906.0 Modified												
6	EPA EERF C-01 Modified												
7	DOE RESL Fe-1, Modified												
8	DOE RESL Ni-1, Modified												
9	DOE EML HASL-300, Tc-02-RC Modified												

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	42	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	92	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	113	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	59	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	71	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	83	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	76	(15%-125%)

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy---Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

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Company : Connecticut Yankee Atomic Power  
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East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0003-004F  
Sample ID: 168404003

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID:	9106-0003-015F	Project:	YANK01204
Sample ID:	168404004	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	25-APR-06		
Receive Date:	05-MAY-06		
Collector:	Client		
Moisture:	22.5%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0456	+/-0.155	0.139	+/-0.155	0.387	pCi/g		BXL1	08/11/06	1434	555696	1
Curium-242	U	0.113	+/-0.181	0.0733	+/-0.182	0.321	pCi/g						
Curium-243/244	U	0.180	+/-0.239	0.181	+/-0.240	0.472	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0196	+/-0.121	0.118	+/-0.121	0.324	pCi/g		BXL1	08/11/06	1633	555697	2
Plutonium-239/240	U	0.0326	+/-0.0639	0.00	+/-0.064	0.0884	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	6.63	+/-6.19	4.86	+/-6.22	10.2	pCi/g		BXL1	08/16/06	1309	555698	3
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00477	+/-0.0216	0.0179	+/-0.0216	0.0375	pCi/g		BXF1	08/14/06	0834	556350	4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	1.03	+/-7.06	5.85	+/-7.06	12.6	pCi/g		DFA1	08/09/06	1215	554582	5
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14		0.156	+/-0.0912	0.0699	+/-0.0913	0.146	pCi/g		ATH2	08/09/06	0632	554583	6
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-9.99	+/-42.7	28.7	+/-42.7	59.2	pCi/g		MXP1	08/12/06	1722	555722	7
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	0.939	+/-10.1	10.3	+/-10.1	21.6	pCi/g		MXP1	08/11/06	1001	555723	8
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.237	+/-0.213	0.170	+/-0.213	0.353	pCi/g		EGD1	08/11/06	2115	554580	9

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified

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**Certificate of Analysis**

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Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0003-015F      Project: YANK01204  
Sample ID: 168404004                      Client ID: YANK001  
Vol. Recv.:                                      Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
3		DOE EML HASL-300, Pu-11-RC Modified											
4		EPA 905.0 Modified											
5		EPA 906.0 Modified											
6		EPA EERF C-01 Modified											
7		DOE RESL Fe-1, Modified											
8		DOE RESL Ni-1, Modified											
9		DOE EML HASL-300, Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	78	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	94	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	101	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	58	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	75	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	62	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	75	(15%-125%)

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

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**Certificate of Analysis**

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Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0003-015F  
Sample ID: 168404004

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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The above sample is reported on a dry weight basis.

**GENERAL ENGINEERING LABORATORIES, LLC**  
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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424  
 Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0004-005F  
 Sample ID: 168404005  
 Matrix: SE  
 Collect Date: 03-MAY-06  
 Receive Date: 12-MAY-06  
 Collector: Client  
 Moisture: 15.4%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.036	+/-0.123	0.157	+/-0.123	0.437	pCi/g	BXL1	08/11/06	1434	555696	1	
Curium-242	U	-0.0169	+/-0.033	0.080	+/-0.0331	0.350	pCi/g						
Curium-243/244	U	-0.0129	+/-0.227	0.247	+/-0.227	0.619	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0217	+/-0.163	0.181	+/-0.163	0.444	pCi/g	BXL1	08/11/06	1633	555697	2	
Plutonium-239/240	U	-0.0708	+/-0.0791	0.128	+/-0.0795	0.337	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	9.52	+/-6.00	4.57	+/-6.07	9.61	pCi/g	BXL1	08/16/06	1326	555698	3	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	0.854	+/-5.88	4.87	+/-5.88	10.5	pCi/g	DFA1	08/09/06	1231	554582	4	
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14		0.347	+/-0.097	0.0674	+/-0.0972	0.141	pCi/g	ATH2	08/09/06	0734	554583	5	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-1.57	+/-46.0	30.7	+/-46.0	63.2	pCi/g	MXP1	08/12/06	1738	555722	6	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	6.39	+/-7.62	7.40	+/-7.62	15.5	pCi/g	MXP1	08/11/06	1017	555723	7	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0198	+/-0.187	0.156	+/-0.187	0.324	pCi/g	EGD1	08/11/06	2131	554580	8	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified
5	EPA EERF C-01 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0004-005F      Project: YANK01204  
Sample ID: 168404005      Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
6	DOE RESL	Fe-1, Modified											
7	DOE RESL	Ni-1, Modified											
8	DOE EML HASL-300,	Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	65	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	95	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	105	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	78	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	80	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	80	(15%-125%)

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy---Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0004-015F  
Sample ID: 168404006  
Matrix: SE  
Collect Date: 03-MAY-06  
Receive Date: 12-MAY-06  
Collector: Client  
Moisture: 26.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0823	+/-0.203	0.178	+/-0.203	0.469	pCi/g	BXL1	08/11/06	1434	555696	1	
Curium-242	U	-0.0154	+/-0.0301	0.0729	+/-0.0302	0.319	pCi/g						
Curium-243/244	U	-0.0994	+/-0.251	0.300	+/-0.251	0.713	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0466	+/-0.213	0.210	+/-0.213	0.521	pCi/g	BXL1	08/11/06	1633	555697	2	
Plutonium-239/240	U	-0.142	+/-0.108	0.191	+/-0.109	0.483	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	6.64	+/-6.53	5.16	+/-6.57	10.8	pCi/g	BXL1	08/16/06	1342	555698	3	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	-2.9	+/-7.59	6.60	+/-7.59	14.2	pCi/g	DFA1	08/09/06	1247	554582	4	
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0352	+/-0.0868	0.0713	+/-0.0868	0.149	pCi/g	ATH2	08/09/06	0837	554583	5	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	1.88	+/-46.8	31.3	+/-46.8	64.4	pCi/g	MXP1	08/12/06	1754	555722	6	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	3.88	+/-7.46	7.40	+/-7.46	15.5	pCi/g	MXP1	08/11/06	1033	555723	7	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0894	+/-0.198	0.163	+/-0.198	0.338	pCi/g	EGD1	08/11/06	2147	554580	8	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified
5	EPA EERF C-01 Modified

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0004-015F      Project: YANK01204  
Sample ID: 168404006      Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
6		DOE RESL Fe-1, Modified											
7		DOE RESL Ni-1, Modified											
8		DOE EML HASL-300, Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	72	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	72	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	94	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	73	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	80	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	78	(15%-125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424  
Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0005-010F  
Sample ID: 168404007  
Matrix: SE  
Collect Date: 02-MAY-06  
Receive Date: 09-MAY-06  
Collector: Client  
Moisture: 56.2%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.128	+/-0.0939	0.142	+/-0.0942	0.385	pCi/g		BXL1	08/11/06	1434	555696	1
Curium-242	U	-0.0115	+/-0.128	0.147	+/-0.128	0.450	pCi/g						
Curium-243/244	U	-0.0333	+/-0.122	0.149	+/-0.122	0.401	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0548	+/-0.169	0.158	+/-0.170	0.403	pCi/g		BXL1	08/11/06	1633	555697	2
Plutonium-239/240	U	0.0195	+/-0.121	0.117	+/-0.121	0.322	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	10.4	+/-6.89	5.27	+/-6.97	11.1	pCi/g		BXL1	08/16/06	1358	555698	3
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	0.00	+/-6.86	5.76	+/-6.86	12.4	pCi/g		DFA1	08/09/06	1303	554582	4
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0636	+/-0.0801	0.0644	+/-0.0801	0.135	pCi/g		ATH2	08/09/06	1017	554583	5
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	36.1	+/-44.1	28.7	+/-44.1	59.0	pCi/g		MXP1	08/12/06	1811	555722	6
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	7.26	+/-10.2	10.0	+/-10.2	20.9	pCi/g		MXP1	08/11/06	1049	555723	7
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.05	+/-0.199	0.169	+/-0.199	0.351	pCi/g		EGD1	08/11/06	2203	554580	8

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified
5	EPA EERF C-01 Modified

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0005-010F  
Sample ID: 168404007

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
6		DOE RESL Fe-1, Modified											
7		DOE RESL Ni-1, Modified											
8		DOE EML HASL-300, Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	85	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	91	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	92	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	81	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	64	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	77	(15%-125%)

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy—Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424  
Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID:	9106-0005-014F	Project:	YANK01204
Sample ID:	168404008	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	02-MAY-06		
Receive Date:	09-MAY-06		
Collector:	Client		
Moisture:	32.3%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.00591	+/-0.219	0.231	+/-0.219	0.608	pCi/g		BXL1	08/11/06	1434	555696	1
Curium-242	U	-0.04	+/-0.0554	0.134	+/-0.0557	0.494	pCi/g						
Curium-243/244	U	0.0634	+/-0.261	0.249	+/-0.261	0.646	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0694	+/-0.106	0.160	+/-0.106	0.434	pCi/g		BXL1	08/11/06	1633	555697	2
Plutonium-239/240	U	-0.0287	+/-0.098	0.127	+/-0.0981	0.369	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	4.68	+/-8.01	6.48	+/-8.02	13.6	pCi/g		BXL1	08/16/06	1415	555698	3
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	6.02	+/-6.38	4.90	+/-6.38	10.6	pCi/g		DFA1	08/09/06	1319	554582	4
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0892	+/-0.0827	0.0655	+/-0.0827	0.137	pCi/g		ATH2	08/09/06	1424	554583	5
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	19.8	+/-46.3	30.6	+/-46.3	62.9	pCi/g		MXP1	08/12/06	1827	555722	6
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	5.41	+/-7.91	7.77	+/-7.91	16.2	pCi/g		MXP1	08/11/06	1106	555723	7
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.134	+/-0.192	0.167	+/-0.192	0.346	pCi/g		EGD1	08/11/06	2218	554580	8

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified
5	EPA EERF C-01 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0005-014F      Project: YANK01204  
Sample ID: 168404008      Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
6		DOE RESL Fe-1, Modified											
7		DOE RESL Ni-1, Modified											
8		DOE EML HASL-300, Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	50	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	61	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	74	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	76	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	76	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	75	(15%-125%)

Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0006-005F  
Sample ID: 168404009  
Matrix: SE  
Collect Date: 28-APR-06  
Receive Date: 12-MAY-06  
Collector: Client  
Moisture: 16.5%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0851	+/-0.136	0.106	+/-0.136	0.390	pCi/g		BXL1	08/16/06	0949	557837	1
Curium-242	U	-0.0253	+/-0.0495	0.120	+/-0.0496	0.525	pCi/g						
Curium-243/244	U	-0.0479	+/-0.0542	0.131	+/-0.0545	0.443	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0183	+/-0.113	0.110	+/-0.113	0.303	pCi/g		BXL1	08/11/06	1633	555697	3
Plutonium-239/240	U	0.00122	+/-0.0662	0.0694	+/-0.0662	0.221	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	4.43	+/-5.83	4.67	+/-5.85	9.82	pCi/g		BXL1	08/16/06	1431	555698	4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	-2.02	+/-6.67	5.76	+/-6.67	12.4	pCi/g		DFA1	08/09/06	1335	554582	5
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14		0.142	+/-0.0798	0.061	+/-0.0799	0.127	pCi/g		ATH2	08/09/06	1719	554583	6
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	12.6	+/-47.6	31.7	+/-47.6	65.3	pCi/g		MXP1	08/12/06	1843	555722	7
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	7.70	+/-9.56	9.31	+/-9.56	19.5	pCi/g		MXP1	08/11/06	1122	555723	8
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.00659	+/-0.185	0.156	+/-0.185	0.323	pCi/g		EGD1	08/11/06	2234	554580	9

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	EPA 906.0 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0006-005F  
Sample ID: 168404009

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
6	EPA EERF C-01 Modified												
7	DOE RESL Fe-1, Modified												
8	DOE RESL Ni-1, Modified												
9	DOE EML HASL-300, Tc-02-RC Modified												

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	76	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	93	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	105	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	72	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	64	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	81	(15%-125%)

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0008-006F  
Sample ID: 168404010  
Matrix: SE  
Collect Date: 05-MAY-06  
Receive Date: 26-MAY-06  
Collector: Client  
Moisture: 34.8%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.129	+/-0.195	0.0758	+/-0.196	0.332	pCi/g		BXL1	08/16/06	0949	557837	1
Curium-242	U	0.103	+/-0.202	0.00	+/-0.203	0.280	pCi/g						
Curium-243/244	U	-0.0161	+/-0.0316	0.0766	+/-0.0317	0.335	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0276	+/-0.0711	0.0967	+/-0.0712	0.275	pCi/g		BXL1	08/11/06	1633	555697	3
Plutonium-239/240	U	0.00359	+/-0.113	0.118	+/-0.113	0.317	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241		14.9	+/-6.37	4.64	+/-6.51	9.75	pCi/g		BXL1	08/16/06	1447	555698	4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	0.00	+/-6.06	5.09	+/-6.06	10.7	pCi/g		DFA1	08/10/06	2150	554582	5
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	0.107	+/-0.0846	0.0664	+/-0.0846	0.139	pCi/g		ATH2	08/09/06	1822	554583	6
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	15.1	+/-41.4	27.5	+/-41.4	56.6	pCi/g		MXP1	08/12/06	1900	555722	7
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.258	+/-0.225	0.179	+/-0.225	0.373	pCi/g		EGD1	08/11/06	2251	554580	8

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	EPA 906.0 Modified
6	EPA EERF C-01 Modified
7	DOE RESL Fe-1, Modified



**GENERAL ENGINEERING LABORATORIES, LLC**  
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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID:	9106-0008-008F	Project:	YANK01204
Sample ID:	168404011	Client ID:	YANK001
Matrix:	SE	Vol. Recv.:	
Collect Date:	08-MAY-06		
Receive Date:	26-MAY-06		
Collector:	Client		
Moisture:	35.7%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0969	+/-0.192	0.152	+/-0.193	0.426	pCi/g		BXL1	08/11/06	1434	555696	1
Curium-242	U	-0.0482	+/-0.142	0.132	+/-0.142	0.446	pCi/g						
Curium-243/244	U	-0.0576	+/-0.202	0.240	+/-0.203	0.603	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0397	+/-0.096	0.125	+/-0.096	0.328	pCi/g		BXL1	08/11/06	1633	555697	2
Plutonium-239/240	U	-0.0315	+/-0.114	0.137	+/-0.114	0.353	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241		11.5	+/-6.72	5.08	+/-6.80	10.7	pCi/g		BXL1	08/16/06	1504	555698	3
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	0.00	+/-5.92	4.97	+/-5.92	10.7	pCi/g		DFA1	08/09/06	1407	554582	4
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	-0.0238	+/-0.0745	0.0636	+/-0.0745	0.133	pCi/g		ATH2	08/09/06	1924	554583	5
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-10.7	+/-40.9	27.5	+/-40.9	56.8	pCi/g		MXP1	08/12/06	1916	555722	6
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0956	+/-0.211	0.174	+/-0.211	0.361	pCi/g		EGD1	08/11/06	2307	554580	7

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 906.0 Modified
5	EPA EERF C-01 Modified
6	DOE RESL Fe-1, Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0008-008F Project: YANK01204  
 Sample ID: 168404011 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
7		DOE EML HASL-300, Tc-02-RC Modified											
Surrogate/Tracer recovery	Test				Recovery%	Acceptable Limits							
Americium-243	Alphaspec Am241, Cm, Solid ALL				65	(15%-125%)							
Plutonium-242	Alphaspec Pu, Solid-ALL FSS				98	(15%-125%)							
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS				96	(25%-125%)							
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS				76	(15%-125%)							
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS				74	(15%-125%)							

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0009-002F  
Sample ID: 168404012  
Matrix: SE  
Collect Date: 11-MAY-06  
Receive Date: 08-JUN-06  
Collector: Client  
Moisture: 33%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.00144	+/-0.155	0.166	+/-0.155	0.458	pCi/g		BXL1	08/11/06	1434	555696	1
Curium-242	U	0.0192	+/-0.145	0.135	+/-0.145	0.455	pCi/g						
Curium-243/244	U	0.013	+/-0.268	0.281	+/-0.268	0.687	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.00587	+/-0.0493	0.0279	+/-0.0494	0.122	pCi/g		BXL1	08/11/06	1632	555697	2
Plutonium-239/240	U	0.0186	+/-0.0492	0.0278	+/-0.0493	0.122	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241		13.6	+/-6.90	5.13	+/-7.01	10.8	pCi/g		BXL1	08/16/06	1520	555698	3
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0151	+/-0.0146	0.0114	+/-0.0146	0.0242	pCi/g		BXF1	08/14/06	0834	556350	4
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	4.12	+/-8.36	6.70	+/-8.36	14.5	pCi/g		DFA1	08/09/06	1422	554582	5
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.046	+/-0.0755	0.0613	+/-0.0755	0.128	pCi/g		ATH2	08/09/06	2027	554583	6
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	12.9	+/-40.6	26.8	+/-40.6	55.2	pCi/g		MXP1	08/12/06	1932	555722	7
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.078	+/-0.203	0.168	+/-0.203	0.348	pCi/g		EGD1	08/11/06	2323	554580	8

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 905.0 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0009-002F      Project: YANK01204  
 Sample ID: 168404012      Client ID: YANK001  
    Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
5	EPA 906.0 Modified												
6	EPA EERF C-01 Modified												
7	DOE RESL Fe-1, Modified												
8	DOE EML HASL-300, Tc-02-RC Modified												

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	61	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	98	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	94	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	69	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	81	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	75	(15%-125%)

Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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 Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
 Contact: Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0009-017F  
 Sample ID: 168404013  
 Matrix: SE  
 Collect Date: 15-MAY-06  
 Receive Date: 08-JUN-06  
 Collector: Client  
 Moisture: 28.4%

Project: YANK01204  
 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0755	+/-0.242	0.230	+/-0.243	0.574	pCi/g	BXL1	08/11/06	1434	555696	1	
Curium-242	U	0.0957	+/-0.220	0.171	+/-0.220	0.509	pCi/g						
Curium-243/244	U	-0.073	+/-0.214	0.256	+/-0.214	0.627	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.00629	+/-0.0529	0.0299	+/-0.0529	0.131	pCi/g	BXL1	08/11/06	1632	555697	2	
Plutonium-239/240	U	0.0262	+/-0.0513	0.00	+/-0.0514	0.0709	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241		13.3	+/-6.66	4.95	+/-6.77	10.4	pCi/g	BXL1	08/16/06	1536	555698	3	
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0205	+/-0.0151	0.0116	+/-0.0151	0.0246	pCi/g	BXF1	08/14/06	0833	556350	4	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	0.583	+/-7.98	6.65	+/-7.98	14.4	pCi/g	DFA1	08/09/06	1438	554582	5	
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	0.0271	+/-0.0759	0.0625	+/-0.0759	0.131	pCi/g	ATH2	08/09/06	2129	554583	6	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-61.9	+/-150	102	+/-150	210	pCi/g	MXP1	08/12/06	1949	555722	7	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0628	+/-0.200	0.165	+/-0.200	0.343	pCi/g	EGD1	08/11/06	2338	554580	8	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 905.0 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
 Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424  
 Mr. Jack McCarthy  
 Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0009-017F Project: YANK01204  
 Sample ID: 168404013 Client ID: YANK001  
 Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
5	EPA 906.0 Modified												
6	EPA EERF C-01 Modified												
7	DOE RESL Fe-1, Modified												
8	DOE EML HASL-300, Tc-02-RC Modified												

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	64	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	91	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	96	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	73	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	79	(15%-125%)

Notes:

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  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy—Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424  
Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0010-001F  
Sample ID: 168404014  
Matrix: SE  
Collect Date: 04-MAY-06  
Receive Date: 17-MAY-06  
Collector: Client  
Moisture: 27.3%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.00677	+/-0.227	0.238	+/-0.227	0.628	pCi/g	BXL1	08/11/06	1434	555696	1	
Curium-242	U	0.0854	+/-0.167	0.00	+/-0.168	0.231	pCi/g						
Curium-243/244	U	0.0361	+/-0.242	0.241	+/-0.242	0.634	pCi/g						
<i>Alphaspec Pu, Solid- ALL FSS</i>													
Plutonium-238	U	0.173	+/-0.181	0.143	+/-0.182	0.331	pCi/g	BXL1	08/11/06	2250	555697	2	
Plutonium-239/240	U	-0.0342	+/-0.0865	0.0951	+/-0.0866	0.235	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241		13.0	+/-6.44	4.78	+/-6.54	10.0	pCi/g	BXL1	08/16/06	1553	555698	3	
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0128	+/-0.0141	0.0125	+/-0.0141	0.0262	pCi/g	BXF1	08/14/06	0833	556350	4	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	0.548	+/-7.50	6.25	+/-7.50	13.5	pCi/g	DFA1	08/09/06	1454	554582	5	
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0555	+/-0.0809	0.0655	+/-0.0809	0.137	pCi/g	ATH2	08/09/06	2232	554583	6	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-18.1	+/-47.6	32.3	+/-47.6	66.6	pCi/g	MXPI	08/12/06	2005	555722	7	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.134	+/-0.205	0.167	+/-0.205	0.347	pCi/g	EGD1	08/11/06	2354	554580	8	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 905.0 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0010-001F      Project: YANK01204  
Sample ID: 168404014                      Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
5	EPA 906.0 Modified												
6	EPA EERF C-01 Modified												
7	DOE RESL Fe-1, Modified												
8	DOE EML HASL-300, Tc-02-RC Modified												

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	50	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	85	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	99	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	70	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	75	(15%-125%)

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0010-012F  
Sample ID: 168404015  
Matrix: SE  
Collect Date: 04-MAY-06  
Receive Date: 17-MAY-06  
Collector: Client  
Moisture: 28.1%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.110	+/-0.184	0.140	+/-0.184	0.386	pCi/g	BXL1	08/11/06	1434	555696	1	
Curium-242	U	-0.0547	+/-0.141	0.192	+/-0.141	0.544	pCi/g						
Curium-243/244	U	-0.126	+/-0.184	0.245	+/-0.185	0.597	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.00157	+/-0.126	0.122	+/-0.126	0.291	pCi/g	BXL1	08/11/06	2250	555697	2	
Plutonium-239/240	U	0.0867	+/-0.0869	0.0406	+/-0.0872	0.128	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	8.31	+/-6.16	4.77	+/-6.21	10.0	pCi/g	BXL1	08/16/06	1609	555698	3	
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00771	+/-0.0144	0.0124	+/-0.0144	0.0263	pCi/g	BXF1	08/14/06	0833	556350	4	
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													
Tritium	U	0.896	+/-6.17	5.11	+/-6.17	11.0	pCi/g	DFA1	08/09/06	1510	554582	5	
<i>Liquid Scint C14, Solid All,FSS</i>													
Carbon-14	U	0.0162	+/-0.0763	0.0633	+/-0.0763	0.132	pCi/g	ATH2	08/09/06	2334	554583	6	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	23.3	+/-49.3	32.5	+/-49.3	67.0	pCi/g	MXP1	08/12/06	2021	555722	7	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0577	+/-0.206	0.171	+/-0.206	0.354	pCi/g	EGD1	08/12/06	0010	554580	8	

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	08/03/06	1534	554649

**The following Analytical Methods were performed**

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	EPA 905.0 Modified

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**Certificate of Analysis**

Company : Connecticut Yankee Atomic Power  
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: August 21, 2006

Client Sample ID: 9106-0010-012F      Project: YANK01204  
Sample ID: 168404015      Client ID: YANK001  
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
5	EPA 906.0 Modified											
6	EPA EERF C-01 Modified											
7	DOE RESL Fe-1, Modified											
8	DOE EML HASL-300, Tc-02-RC Modified											

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	81	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	91	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	99	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	68	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	74	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	75	(15%-125%)

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B Target analyte was detected in the associated blank
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# QUALITY CONTROL DATA

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Report Date: August 21, 2006

Page 1 of 6

Client : Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 168404

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 555696											
QC1201153130 168340011 DUP											
Americium-241		U	-0.000522	U	0.0578	pCi/g	204	(0% - 100%)	BXL1	08/11/06	14:34
			Uncert: +/-0.0385		+/-0.278						
			TPU: +/-0.0385		+/-0.279						
Curium-242		U	0.00	U	-0.0405	pCi/g	200	(0% - 100%)			
			Uncert: +/-0.0756		+/-0.0562						
			TPU: +/-0.0756		+/-0.0565						
Curium-243/244		U	-0.0177	U	-0.0517	pCi/g	98	(0% - 100%)			
			Uncert: +/-0.0764		+/-0.257						
			TPU: +/-0.0765		+/-0.257						
QC1201153132 LCS											
Americium-241	12.8				12.8	pCi/g		100 (75%-125%)			
			Uncert: +/-1.84								
			TPU: +/-2.70								
Curium-242				U	-0.0328	pCi/g					
			Uncert: +/-0.0454								
			TPU: +/-0.0457								
Curium-243/244	15.5				14.3	pCi/g		92 (75%-125%)			
			Uncert: +/-1.94								
			TPU: +/-2.92								
QC1201153129 MB											
Americium-241				U	0.0471	pCi/g					
			Uncert: +/-0.157								
			TPU: +/-0.157								
Curium-242				U	-0.0469	pCi/g					
			Uncert: +/-0.0459								
			TPU: +/-0.0464								
Curium-243/244				U	-0.00385	pCi/g					
			Uncert: +/-0.210								
			TPU: +/-0.210								
QC1201153131 168340011 MS											
Americium-241	13.3	U	-0.000522		12.0	pCi/g		91 (75%-125%)			
			Uncert: +/-0.0385		+/-1.38						
			TPU: +/-0.0385		+/-2.08						
Curium-242		U	0.00	U	0.0427	pCi/g					
			Uncert: +/-0.0756		+/-0.0837						
			TPU: +/-0.0756		+/-0.0839						
Curium-243/244	16.1	U	-0.0177		15.9	pCi/g		99 (75%-125%)			
			Uncert: +/-0.0764		+/-1.58						
			TPU: +/-0.0765		+/-2.61						
Batch 555697											
QC1201153134 168340011 DUP											
Plutonium-238		U	-0.0155	U	0.0237	pCi/g	956	(0% - 100%)	BXL1	08/11/06	22:51

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## QC Summary

Workorder: 168404

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 555697											
Plutonium-239/240		Uncert:		+/-0.0215							
		TPU:		+/-0.0216							
	U		U	0.0414							
		Uncert:		+/-0.0934	pCi/g	2410		(0% - 100%)			
		TPU:		+/-0.0935							
QC1201153136	LCS										
Plutonium-238			U	0.155	pCi/g			(75%-125%)			
		Uncert:		+/-0.141							
		TPU:		+/-0.142							
Plutonium-239/240	11.8			11.5	pCi/g		98	(75%-125%)			
		Uncert:		+/-0.856							
		TPU:		+/-1.32							
QC1201153133	MB										
Plutonium-238			U	0.0552	pCi/g					08/11/06	22:50
		Uncert:		+/-0.186							
		TPU:		+/-0.186							
Plutonium-239/240			U	-0.0978	pCi/g						
		Uncert:		+/-0.0892							
		TPU:		+/-0.0899							
QC1201153135	168340011	MS									
Plutonium-238			U	-0.0155	pCi/g			(75%-125%)		08/11/06	22:51
		Uncert:		+/-0.0215							
		TPU:		+/-0.0216							
Plutonium-239/240	12.3	U	U	0.0414	pCi/g		84	(75%-125%)			
		Uncert:		+/-0.0934							
		TPU:		+/-0.0935							
Batch 555698											
QC1201153138	168340011	DUP									
Plutonium-241			U	7.28	pCi/g	0		(0% - 100%)	BXL1	08/16/06	16:41
		Uncert:		+/-6.30							
		TPU:		+/-6.35							
QC1201153140	LCS										
Plutonium-241		137		145	pCi/g		106	(75%-125%)		08/16/06	17:14
		Uncert:		+/-12.5							
		TPU:		+/-19.9							
QC1201153137	MB										
Plutonium-241			U	8.57	pCi/g					08/16/06	16:25
		Uncert:		+/-6.93							
		TPU:		+/-6.98							
QC1201153139	168340011	MS									
Plutonium-241		138	U	7.28	pCi/g		103	(75%-125%)		08/16/06	16:58
		Uncert:		+/-6.30							
		TPU:		+/-6.35							
Batch 557837											
QC1201158317	168404009	DUP									
Americium-241			U	-0.0851	pCi/g	616		(0% - 100%)	BXL1	08/16/06	09:49
		Uncert:		+/-0.136							
		TPU:		+/-0.136							
Curium-242			U	-0.0253	pCi/g	247		(0% - 100%)			

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## QC Summary

Workorder: 168404

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	557837										
Curium-243/244		Uncert:	+/-0.0495	+/-0.334							
		TPU:	+/-0.0496	+/-0.335							
	U		-0.0479	U 0.0761	pCi/g	879		(0% - 100%)			
		Uncert:	+/-0.0542	+/-0.149							
		TPU:	+/-0.0545	+/-0.149							
QC1201158319	LCS										
Americium-241		24.5		25.4	pCi/g		104	(75%-125%)			
		Uncert:		+/-2.47							
		TPU:		+/-4.16							
Curium-242				U 0.0477	pCi/g						
		Uncert:		+/-0.127							
		TPU:		+/-0.127							
Curium-243/244		29.7		27.0	pCi/g		91	(75%-125%)			
		Uncert:		+/-2.54							
		TPU:		+/-4.38							
QC1201158316	MB										
Americium-241				U 0.234	pCi/g						
		Uncert:		+/-0.275							
		TPU:		+/-0.277							
Curium-242				U 0.00	pCi/g						
		Uncert:		+/-0.152							
		TPU:		+/-0.152							
Curium-243/244				U -0.0551	pCi/g						
		Uncert:		+/-0.0624							
		TPU:		+/-0.0628							
QC1201158318	168404009	MS									
Americium-241		26.4	U -0.0851	29.1	pCi/g		110	(75%-125%)			
		Uncert:	+/-0.136	+/-2.97							
		TPU:	+/-0.136	+/-5.01							
Curium-242			U -0.0253	U 0.126	pCi/g						
		Uncert:	+/-0.0495	+/-0.247							
		TPU:	+/-0.0496	+/-0.248							
Curium-243/244		32.4	U -0.0479	31.7	pCi/g		98	(75%-125%)			
		Uncert:	+/-0.0542	+/-3.12							
		TPU:	+/-0.0545	+/-5.39							
<b>Rad Gas Flow</b>											
Batch	556350										
QC1201154645	168404003	DUP									
Strontium-90			U -0.00343	U -0.00637	pCi/g	0		(0% - 100%)	BXF1	08/14/06	08:33
		Uncert:	+/-0.0203	+/-0.0152							
		TPU:	+/-0.0203	+/-0.0152							
QC1201154647	LCS										
Strontium-90		1.56		1.30	pCi/g		83	(75%-125%)			
		Uncert:		+/-0.0563							
		TPU:		+/-0.0881							
QC1201154644	MB										
Strontium-90				U 0.0176	pCi/g						
		Uncert:		+/-0.018							
		TPU:		+/-0.018							

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## QC Summary

Workorder: 168404

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>										
Batch	556350									
QC1201154646	168404003	MS								
Strontium-90	1.58	U	-0.00343	1.29	pCi/g	82	(75%-125%)			
	Uncert:		+/-0.0203	+/-0.0535						
	TPU:		+/-0.0203	+/-0.0813						
<b>Rad Liquid Scintillation</b>										
Batch	554580									
QC1201150562	168340012	DUP								
Technetium-99		U	0.0338	U 0.266	pCi/g	0	(0% - 100%)	EGD1	08/12/06	00:42
	Uncert:		+/-0.192	+/-0.226						
	TPU:		+/-0.192	+/-0.226						
QC1201150564	LCS									
Technetium-99	13.1			13.6	pCi/g	103	(75%-125%)		08/12/06	01:14
	Uncert:			+/-0.496						
	TPU:			+/-0.599						
QC1201150561	MB									
Technetium-99		U	0.0311		pCi/g				08/12/06	00:26
	Uncert:			+/-0.177						
	TPU:			+/-0.177						
QC1201150563	168340012	MS								
Technetium-99	13.0	U	0.0338	12.0	pCi/g	92	(75%-125%)		08/12/06	00:58
	Uncert:		+/-0.192	+/-0.523						
	TPU:		+/-0.192	+/-0.602						
Batch	554582									
QC1201150570	168340011	DUP								
Tritium		U	1.77	U 1.62	pCi/g	0	(0% - 100%)	DFA1	08/09/06	15:42
	Uncert:		+/-8.20	+/-7.47						
	TPU:		+/-8.20	+/-7.47						
QC1201150572	LCS									
Tritium	68.3			76.2	pCi/g	111	(75%-125%)		08/09/06	16:14
	Uncert:			+/-14.0						
	TPU:			+/-14.1						
QC1201150569	MB									
Tritium		U	0.586		pCi/g				08/09/06	15:26
	Uncert:			+/-8.01						
	TPU:			+/-8.01						
QC1201150571	168340011	MS								
Tritium	61.3	U	1.77	61.8	pCi/g	101	(75%-125%)		08/09/06	15:58
	Uncert:		+/-8.20	+/-12.2						
	TPU:		+/-8.20	+/-12.3						
Batch	554583									
QC1201150574	168404003	DUP								
Carbon-14		U	0.0937	U 0.0422	pCi/g	0	(0% - 100%)	ATH2	08/10/06	01:39
	Uncert:		+/-0.0813	+/-0.075						
	TPU:		+/-0.0813	+/-0.0751						
QC1201150576	LCS									
Carbon-14	7.27			7.14	pCi/g	98	(75%-125%)		08/10/06	03:00
	Uncert:			+/-0.508						
	TPU:			+/-0.520						
QC1201150573	MB									

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**QC Summary**

Workorder: 168404

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	554583										
Carbon-14			U	-0.0315	pCi/g						
				Uncert: +/-0.0776							
				TPU: +/-0.0776							
QC1201150575	168404003	MS									
Carbon-14	15.1	U	0.0937	13.8	pCi/g		92 (75%-125%)			08/10/06	02:43
				Uncert: +/-0.0813							
				TPU: +/-0.0813							
Batch	555722										
QC1201153223	168340012	DUP									
Iron-55		U	-26.5	U	5.83	pCi/g	0	(0% - 100%)	MXPI	08/12/06	20:54
				Uncert: +/-65.1							
				TPU: +/-65.1							
QC1201153225	LCS										
Iron-55	641			660	pCi/g		103 (75%-125%)			08/12/06	21:27
				Uncert: +/-56.2							
				TPU: +/-67.2							
QC1201153222	MB										
Iron-55				U	18.2	pCi/g				08/12/06	20:38
				Uncert: +/-39.6							
				TPU: +/-39.6							
QC1201153224	168340012	MS									
Iron-55	717	U	-26.5	688	pCi/g		96 (75%-125%)			08/12/06	21:11
				Uncert: +/-65.1							
				TPU: +/-65.1							
Batch	555723										
QC1201153227	168340012	DUP									
Nickel-63		U	3.79	U	6.68	pCi/g	0	(0% - 100%)	MXPI	08/11/06	11:55
				Uncert: +/-5.39							
				TPU: +/-5.40							
QC1201153229	LCS										
Nickel-63	512			479	pCi/g		94 (75%-125%)			08/11/06	12:27
				Uncert: +/-22.4							
				TPU: +/-27.1							
QC1201153226	MB										
Nickel-63				U	15.7	pCi/g				08/11/06	11:38
				Uncert: +/-9.92							
				TPU: +/-9.93							
QC1201153228	168340012	MS									
Nickel-63	530	U	3.79	511	pCi/g		96 (75%-125%)			08/11/06	12:11
				Uncert: +/-5.39							
				TPU: +/-5.40							

Notes:

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported

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**QC Summary**

Workorder: 168404

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
>										
A										
B										
BD										
C										
D										
H										
J										
N/A										
R										
U										
UI										
X										
Y										
^										
h										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

DISCHARGE CANAL  
SURVEY UNIT 9106-0003

RELEASE RECORD

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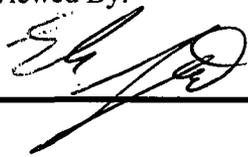
Attachment 2b  
Split Sample Assessment Forms  
(2 Pages)

**Split Sample Assessment Form**

Survey Area #: 9106	Survey Unit #: 0003	Survey Unit Name: Discharge Canal										
Sample Plan or WPIR#: 2006-021				SML #: 9106-0003-004								
Sample Description: Comparison of split samples collected from sample measurement location #04 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9106-0003-004F</u> the comparison sample was <u>9106-0003-004FS</u> .												
STANDARD				COMPARISON								
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)				
Cs-137	2.92E-01	2.50E-02	12	0.6 - 1.66	3.14E-01	2.30E-02	1.08	Y				
Co-60	7.43E-01	3.61E-02	21	0.75 - 1.33	9.84E-01	5.15E-02	1.32	Y				
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples.							
					Resolution		Agreement Range					
					4	7	0.50	2.00				
					8	15	0.60	1.66				
16	50	0.75	1.33									
51	200	0.80	1.25									
	> 200	0.85	1.18									
Performed By: <i>Paul Rensell</i>			Date: 7-13-06		Reviewed By: <i>[Signature]</i>			Date: 7/13/06				

WPIR – Work Plan and Inspection Record  
SML – Sample Measurement Location designation

**Split Sample Assessment Form**

Survey Area#:	9106	Survey Unit #:	0003	Survey Unit Name: Discharge Canal							
Sample Plan or WPIR#: 2006-0021				SML #: 9106-0003-010							
Sample Description: Comparison of split samples collected from sample measurement location #10 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9106-0003-010E</u> , the comparison sample was <u>9106-0003-010FS</u> .											
STANDARD				COMPARISON							
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)			
Cs-137	2.04E-01	2.08E-02	10	0.6 - 1.66	1.69E-01	1.79E-02	0.83	Y			
Co-60	2.28E-01	2.54E-02	9	0.6 - 1.66	0.00E+00	2.02E-01	0.00	N			
K-40	1.24E+01	5.05E-01	25	0.75 - 1.33	1.13E+01	4.91E-01	0.91	Y			
Comments/Corrective Actions: Since Co-60 has a likelihood to be present in the sample matrix in particulate form, one would not necessarily expect it to be homogeneously mixed from processing of the sample-split aliquot. Since both Cs-137 and K-40 were also found to be present at an acceptable level of agreement, no further action is warranted.					Table is provided to show acceptance criteria used to assess split samples.			Resolution		Agreement Range	
								4	7	0.50	2.00
					8	15	0.60	1.66			
					16	50	0.75	1.33			
					51	200	0.80	1.25			
	> 200	0.85	1.18								
Performed By:			Date:		Reviewed By:			Date:			
			7-13-06					7/13/06			

WPIR – Work Plan and Inspection Record  
SML – Sample Measurement Location designation

DISCHARGE CANAL  
SURVEY UNIT 9106-0003  
RELEASE RECORD

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Attachment 2c  
Preliminary Data Forms  
(1 Page)

### Preliminary Data Review Form - Samples for the Sign Test

Survey Unit: 9106- 0003  
 Survey Unit Name: Discharge Canal  
  
 Classification: 2  
 Survey Media: Soil  
 Type of Survey: Final Status Survey  
 Type of Measurement: Radionuclide Specific  
 Number of Measurements: 15  
 Operational DCGL: 1

#### BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60
Minimum Value:	3.52E-04	1.45E-02
Maximum Value:	3.18E-01	8.05E-01
Mean:	1.48E-01	2.10E-01
Median:	1.28E-01	1.07E-01
Standard Deviation:	1.16E-01	2.70E-01

#### RADIONUCLIDE CONCENTRATION (pCi/g)

NUMBER	Cs-137	Co-60	Identified?	Identified?
9106-0003-001F	1.28E-01	1.07E-01	Y	Y
9106-0003-002F	4.37E-02	1.89E-02	Y	N
9106-0003-003F	3.93E-02	2.45E-02	Y	Y
9106-0003-004F	2.92E-01	7.43E-01	Y	Y
9106-0003-005F	2.10E-01	1.36E-01	Y	Y
9106-0003-006F	1.05E-01	1.86E-02	Y	N
9106-0003-007F	2.64E-02	2.90E-02	Y	N
9106-0003-008F	2.46E-01	1.09E-01	Y	Y
9106-0003-009F	3.18E-01	4.45E-01	Y	Y
9106-0003-010F	2.04E-01	2.28E-01	Y	Y
9106-0003-012F	4.27E-02	1.45E-02	Y	N
9106-0003-013F	1.96E-02	2.41E-02	N	N
9106-0003-014F	2.91E-01	4.33E-01	Y	Y
9106-0003-015F	2.57E-01	8.05E-01	Y	Y
9106-0003-016F	3.52E-04	2.02E-02	N	Y

Performed By: *Don Ruskell*

Date: 7-13-06

Independent Review: *Dr. P. L. Sargent*

Date: 7/13/06

DISCHARGE CANAL  
SURVEY UNIT 9106-0003  
RELEASE RECORD

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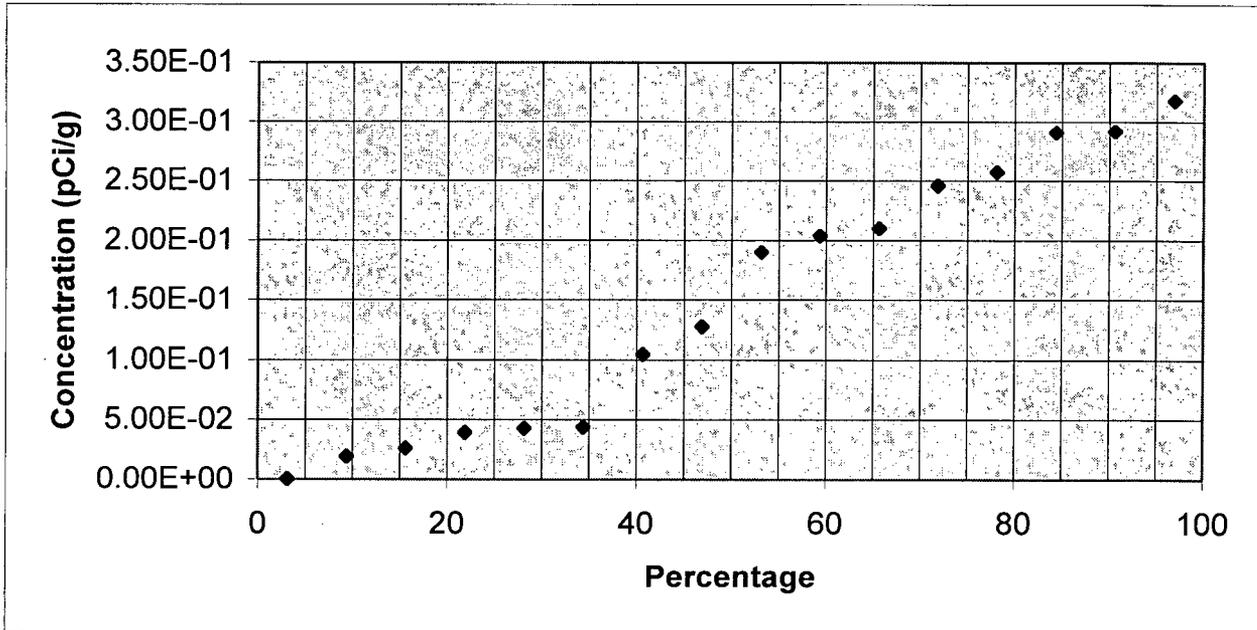
Attachment 2d  
Graphical Representation of Data  
(4 Pages)

**Quantile Plot For Cesium - 137**

Survey Unit: 9106-0003

Survey Unit Name: Discharge Canal

Mean: 1.48E-01 pCi/g



Cs-137	Rank	Percentage
3.52E-04	1	3 %
1.96E-02	2	9 %
2.64E-02	3	16 %
3.93E-02	4	22 %
4.27E-02	5	28 %
4.37E-02	6	34 %
1.05E-01	7	41 %
1.28E-01	8	47 %
1.90E-01	9	53 %
2.04E-01	10	59 %
2.10E-01	11	66 %
2.46E-01	12	72 %
2.57E-01	13	78 %
2.91E-01	14	84 %
2.92E-01	15	91 %
3.18E-01	16	97 %

Prepared By: *Debra R. Roubert*

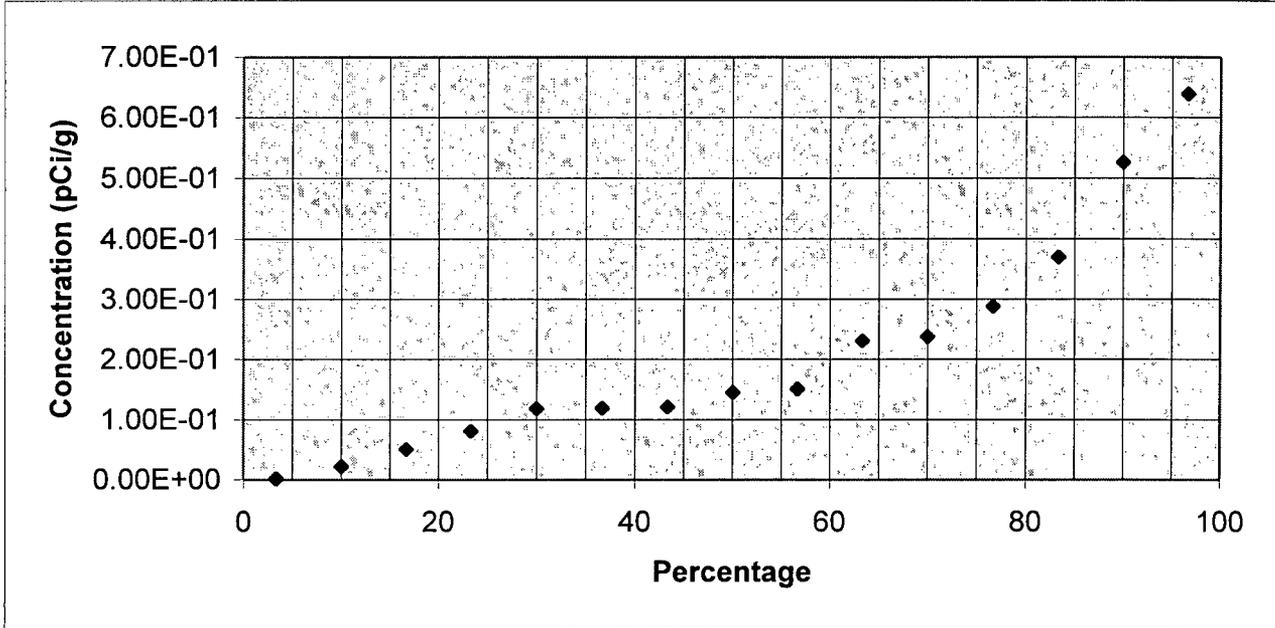
Date: 7-13-06

Reviewed By: *[Signature]*

Date: 7/13/06

**Quantile Plot For Cobalt - 60**

Survey Unit: 9106-0002  
 Survey Unit Name: Discharge Canal  
 Mean: 2.07E-01 pCi/g



Co-60	Rank	Percentage
1.46E-03	1	3 %
2.13E-02	2	10 %
5.07E-02	3	17 %
8.07E-02	4	23 %
1.18E-01	5	30 %
1.19E-01	6	37 %
1.21E-01	7	43 %
1.45E-01	8	50 %
1.51E-01	9	57 %
2.31E-01	10	63 %
2.38E-01	11	70 %
2.88E-01	12	77 %
3.70E-01	13	83 %
5.26E-01	14	90 %
6.39E-01	15	97 %

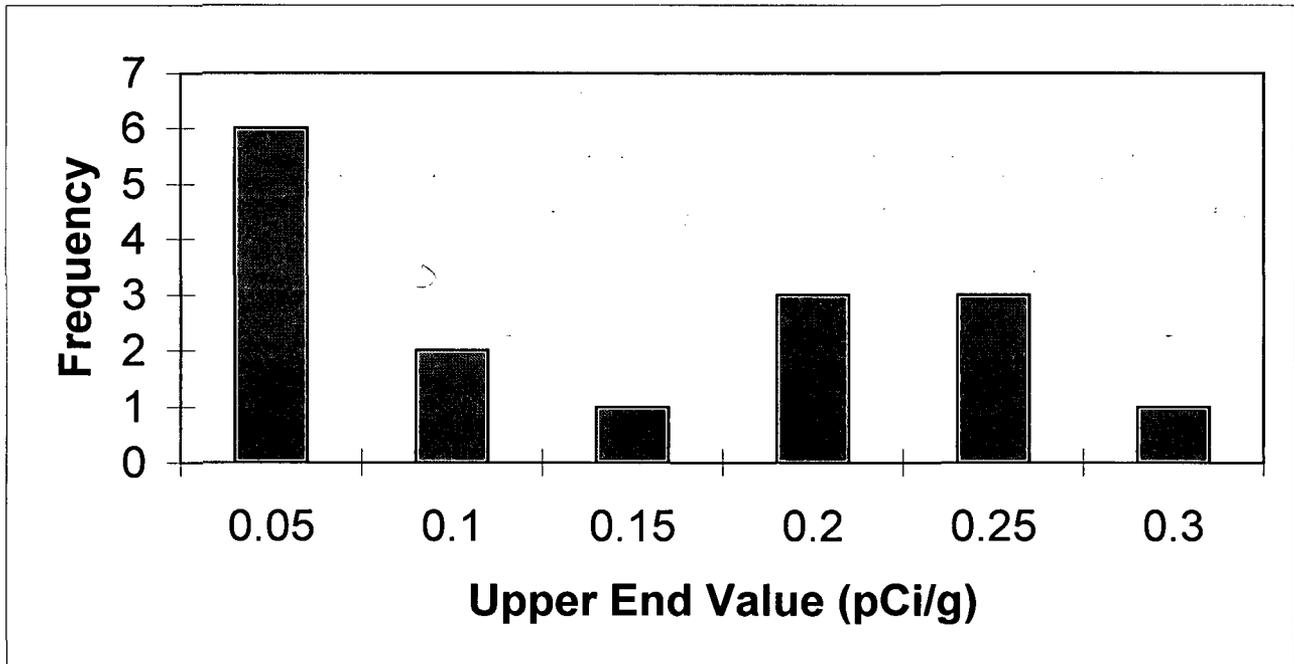
Prepared By: *Orin Rowland*  
 Reviewed By: *[Signature]*

Date: 7-25-06  
 Date: 7/25/06

**Frequency Plot For Cesium - 137**

Survey Unit: 9106-0003  
 Survey Unit Name: Discharge Canal

Mean: 0.148 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.05	6	38%
0.1	2	13%
0.15	1	6%
0.2	3	19%
0.25	3	19%
0.3	1	6%
Total	16	100%

Prepared By: Dal Rendall

Date: 11-9-06

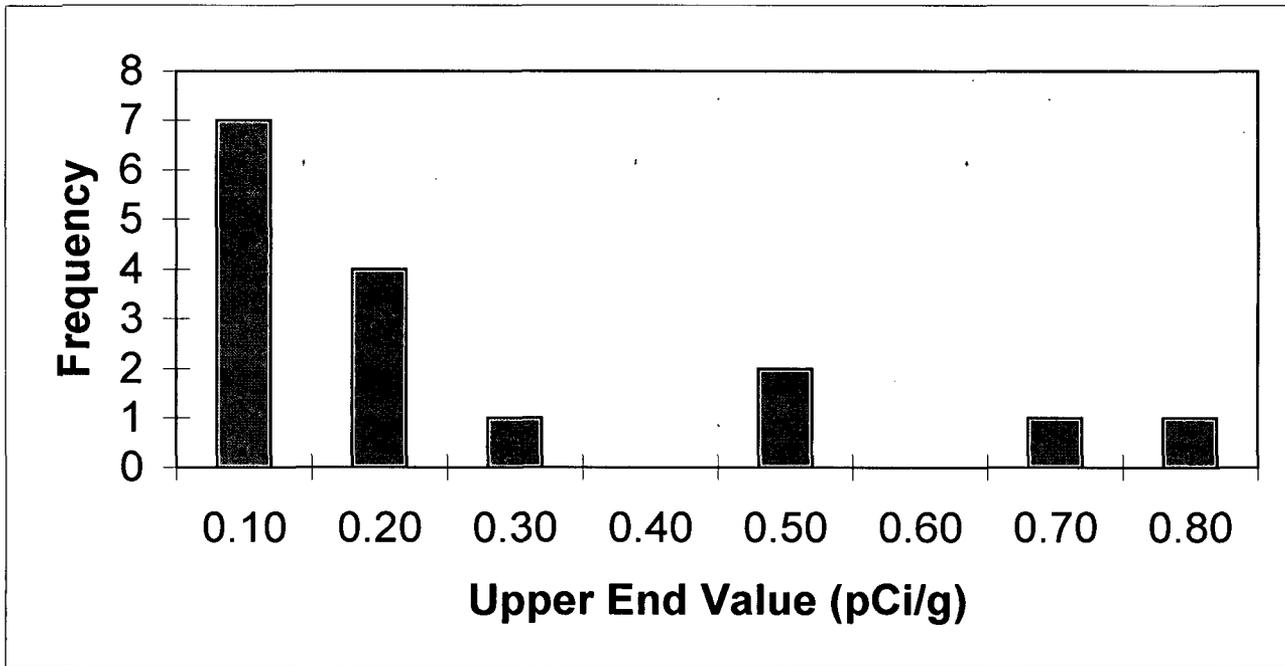
Reviewed By: [Signature]

Date: 11/13/06

**Frequency Plot For Co - 60**

Survey Unit: 9106-0003  
 Survey Unit Name: Discharge Canal

Mean: 0.210 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.10	7	44%
0.20	4	25%
0.30	1	6%
0.40	0	0%
0.50	2	13%
0.60	0	0%
0.70	1	6%
0.80	1	6%
Total	16	100%

Prepared By:           Dul Brubaker          

Date:           11-9-06          

Reviewed By:           [Signature]          

Date:           11/13/06

DISCHARGE CANAL  
SURVEY UNIT 9106-0003  
RELEASE RECORD

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Attachment 2e  
Sign Test Calculation  
(1 Page)

**Sign Test Calculation Sheet For Multiple Radionuclides**

SU Number: 9106-0003

Survey Unit Name: Discharge Canal

WP&IR#: 2006-021

Classification : 2

TYPE I (α error):0.05

TYPE I (β error):0.05

Radionuclides:		Cs-137	Co-60		
Survey Design DCGL (pCi/g):		3.16	1.52		
Results Cs-137	Results Co-60	Results Pu-241	Weighted Sum (Ws) (includes Pu-241 component)	DCGL-Result	Sign
1.28E-01	1.07E-01	2.20E+01	1.48E-01	8.52E-01	1
4.37E-02	1.89E-02	2.20E+01	6.35E-02	9.36E-01	1
3.93E-02	2.45E-02	2.20E+01	6.58E-02	9.34E-01	1
2.92E-01	7.43E-01	8.31E+00	5.95E-01	4.05E-01	1
2.10E-01	1.36E-01	2.20E+01	1.93E-01	8.07E-01	1
1.05E-01	1.86E-02	2.20E+01	8.27E-02	9.17E-01	1
2.64E-02	2.90E-02	2.20E+01	6.47E-02	9.35E-01	1
2.46E-01	1.09E-01	5.42E+01	2.41E-01	7.59E-01	1
3.18E-01	4.45E-01	2.20E+01	4.31E-01	5.69E-01	1
2.04E-01	2.28E-01	2.20E+01	2.52E-01	7.48E-01	1
4.27E-02	1.45E-02	2.20E+01	6.03E-02	9.40E-01	1
1.96E-02	2.41E-02	2.20E+01	5.93E-02	9.41E-01	1
2.91E-01	4.33E-01	1.90E+01	4.09E-01	5.91E-01	1
2.57E-01	8.05E-01	6.63E+00	6.22E-01	3.78E-01	1
3.52E-04	2.02E-02	2.20E+01	5.06E-02	9.49E-01	1
1.90E-01	1.85E-01	2.20E+01	2.19E-01	7.81E-01	1

Number of Positive Differences (S+): 16

Critical Value: 11

Survey Unit: Meets Acceptance Criterion

Performed By: *Paul R. ...*

Date: 11-9-06

Independent Review: *[Signature]*

Date: 11/13/06

DISCHARGE CANAL  
SURVEY UNIT 9106-0003

RELEASE RECORD

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Attachment 2f  
COMPASS DQA Surface Soil Report with  
Retrospective Power Curve  
(4 Pages)

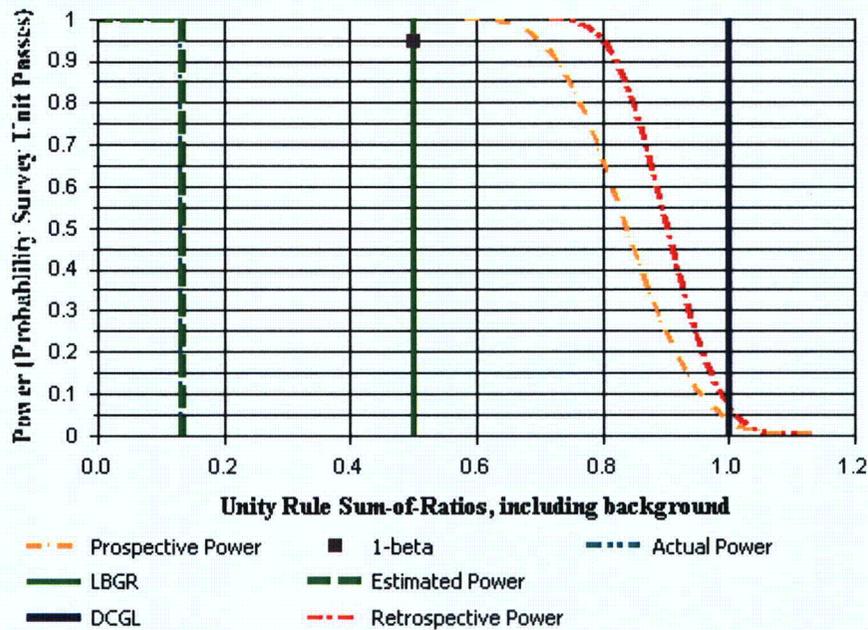


# DQA Surface Soil Report

## Assessment Summary

Site: 9106-0003  
Planner(s): Dale Randall  
Survey Unit Name: Discharge Canal 9106-0003  
Report Number: 1  
Survey Unit Samples: 16  
Reference Area Samples: 0  
Test Performed: Sign                      Test Result: Not Performed  
Judgmental Samples: 0                      EMC Result: Not Performed  
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

## Retrospective Power Curve





# DQA Surface Soil Report

## Survey Unit Data

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NOTE: Type = "S" indicates survey unit sample.  
Type = "R" indicates reference area sample.

Sample Number	Type	Co-60 (pCi/g)	Cs-137 (pCi/g)
9106-0003-001F	S	0.11	0.13
9106-0003-002F	S	0.02	0.04
9106-0003-003F	S	0.02	0.04
9106-0003-004F	S	0.74	0.29
9106-0003-005F	S	0.14	0.21
9106-0003-006F	S	0.02	0.1
9106-0003-007F	S	0.03	0.03
9106-0003-008F	S	0.11	0.25
9106-0003-009F	S	0.44	0.32
9106-0003-010F	S	0.23	0.2
9106-0003-012F	S	0.01	0.04
9106-0003-013F	S	0.02	0.02
9106-0003-015F	S	0.8	0.26
9106-0003-016F	S	0.02	0
9106-0003-018F	S	0.18	0.19
9106-0003-014F	S	0.43	0.29

## Modified Data (Unity Rule SOR)

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NOTE: Type = "S" indicates survey unit sample.  
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
9106-0003-001F	S	0.11
9106-0003-002F	S	0.03
9106-0003-003F	S	0.03
9106-0003-004F	S	0.58
9106-0003-005F	S	0.16
9106-0003-006F	S	0.05
9106-0003-007F	S	0.03
9106-0003-008F	S	0.15
9106-0003-009F	S	0.39
9106-0003-010F	S	0.21
9106-0003-012F	S	0.02
9106-0003-013F	S	0.02
9106-0003-015F	S	0.61
9106-0003-016F	S	0.01
9106-0003-018F	S	0.18
9106-0003-014F	S	0.38



# DQA Surface Soil Report

## Basic Statistical Quantities Summary

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Statistic	Survey Unit	Background	DQO Results
Sample Number	16	N/A	N=15
Mean (SOR)	0.19	N/A	0.13
Median (SOR)	0.13	N/A	N/A
Std Dev (SOR)	0.20	N/A	0.26
High Value (SOR)	0.61	N/A	N/A
Low Value (SOR)	0.01	N/A	N/A